İSTANBUL TECHNICAL UNIVERSITY ★ INSTITUTE OF SCIENCE AND TECHNOLOGY

VALUE CHAIN MANAGEMENT AND AN INVESTIGATION OF ERP APPLICATION IN A COMPANY

Master's Thesis by
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Programme: Management Engineering

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MAY 2006

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İSTANBUL TECHNICAL UNIVERSITY ★ FEN BİLİMLERİ ENSTİTÜSÜ

DEĞER ZİNCİRİ YÖNETİMİ VE BİR FİRMADA ERP UYGULAMASI

YÜKSEK LİSANS TEZİ
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Doç. Dr. Mehmet TANYAŞ

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ÖZET

Yönetim, geçen yüzyılda işletmeler için en önemli konulardan biri haline gelmiştir. Günümüzde firmalar rekabet edebilmek, firma hedeflerine ulaşabilmek ve varlıklarını sürdürebilmek için tüm kaynaklarını harcamaktadırlar. Her geçen yıl rekabet artmakta; bununla birlikte rakip sayısı azalmaktadır. Sadece büyük ölçekli firmalar varlıklarını sürdürebilirken; küçük ve orta ölçekli firmalar üzerlerinde oluşan baskıyla başa edebilmekte birçok sorunla karşılaşmaktadırlar.

Firmalar, işletmelerini yönetirken değişik araçtan faydalanmaktadırlar. İş dünyasındaki büyük rekabet nedeniyle, devamlı olarak değişmekte ve gelişmektedirler. Bu çalışmada firma ölçeğinden bağımsız olarak kullanılabilecek değişik yönetim araçları açıklanmaktadır.

Bu çalışmada açıklanmakta olan yönetim araçları: Değer Zinciri Yönetimi (Value Chain Management), Tedarik Zinciri Yönetimi (Supply Chain Management), Müşteri İlişkileri Yönetimi (Customer Relation Management) ve Bilgi Teknolojilerdir (Information Technologies).

Değer Zinciri Yönetimi endüstride sık kullanılan bir araç olmakla birlikte, oluşturulma ve çalışma mekanizmasını anlayabilmek için VCM çatısının, faaliyetlerinin ve temel noktaların detaylı olarak incelenmesi gerekmektedir. VCM birbirleri ile ilişki; ancak farklı bir grup faaliyetden oluşmaktadır. Ana amacı sadece ekonomik olarak değil, aynı zamanda pazarlama, müşteri, üretim ve tedarik ilişkilerinde daha fazla fayda sağlamayı başarmaktır. Değer Zinciri Yönetimi tedarikçiler ve müşterilerle olabildiğince yakın ilişki kurulmasını gerektirir.

Tedarik Zinciri Yönetimi ve Müşteri İlişkileri Yönetimi, firmalar tedarikçi ve müşterileriyle yakın ilişkiler kurdukları yakın ilişkilerin faydalarını değerlendirmeye başladıktan sonra kullanılmaya başlanmıştır.

VCM gibi, SCM ve CRM de belirsizliği azalttığı ve müşteri hizmetlerini geliştirdiği için, rekabet gücünü geliştiren yöntemler haline gelişmiştir. Aynı zamanda; üretim, malzeme girişi ve ürün çıkışlarına ilişkin sorunları azaltarak çevikliği arttırmaktadırlar.

Bilgi Teknolojileri son yirmi otuz yılda iş dünyasında ortaya çıkan en önemli yeniliklerden biridir. Firmalardaki basit ve rutin işlerin yapılmasına yardımcı olacak bilgisayarların tanıtılmasıyla başlamış; günümüzde, yeni yazılımlarla, yöneticilerin firmalarını bütünsel düzeyde yönetmelerine yardımcı olmaktadır. Bu teknoloji farklı firmalar arasında yeni ilişkilerin kurulmasının ve rakip olarak değil grup olarak çalışılmasının anahtardır.

Bu çalışmada farklı araçlar ele alınmış; özellikle VCM başta olmak üzere; bu araçların, faydaları, sınırları, yapıları, faaliyetleri ve aralarındaki bağlantıları analiz edilmiştir. Aynı zamanda bir firmanın extranet olarak bilinen Bilgi Teknolojisinden faydalanarak Tedarik Zinciri Yönetimini nasıl uyguladığını açıklayan üç çarpıcı örnek verilmiştir.

Tanıtılmış olan bu farklı araçlar, firmaların işlerini sürdürebilmelerinde ve daha çok ekonomik fayda sağlamalarında, aynı zamanda, çevikliklerini arttırmada ve çalışma yöntemlerinde farklılaşmalarında anahtar unsurlar olabilirler.

Anahtar kelimeler: Tedarik Zinciri Yönetimi, Değer zinciri Yönetimi, Müşteri İlişkileri Yönetimi, Çeviklik, Hız, Rekabet, İlişki, Farklılaşma, İşletme.

Mayıs 2006 Joaquim Capell

SUMMARY

Management has been in the last century one of the most important subjects inside the business. Every company spends lot of money to manage its business with the maximum yield to compete with all the firm's adversaries. Year to year this competition is getting harder and small and medium companies have lots of problems to survive.

Companies have different tools to manage its business, but because of the big rivalry that exists between them they are changing and developing continuously. This paper exposes some of the different immaterial gadgets that nowadays are more used from different companies independently of its size.

The basics management tools that are exposed in the paper are: the Value Chain, the Supply Chain, the Customer Relation and the Information Technologies. All of them are so important nowadays; the business world is changing continuously and companies have realized that without this different gadgets linked between them it is impossible to throw ahead.

Value Chain Management (VCM) is so common in industry, but it is necessary an analysis of its framework, activities and the basic points that there are inside it to understand better how does it works. VCM is a group of different activities that linked between them try to achieve more benefits for the company, but not just economically, but also for marketing, production and customer and supply relation. Because Value Chain Management tries to put the suppliers and customers as much closer as possible from the firm.

Supply Chain Management (SCM) and Customer Relation Management (CRM) started to be used for many industries after the companies began to appreciate the benefits of creating an integrated relationship with their suppliers and customers.

As VCM, SCM and CRM have become a way of improving competitiveness by reducing uncertainty and enhancing customer service and at the same time, improving the agility, the answering to the orders and reducing the problems related to the production.

In relation to the Information Technologies can be said that is one of the most important innovations that has appear in the world of business in the last twenty-thirty years, starting with the introduction of the computers and nowadays with the new software that helps the managers to run a firm. This gadget is the key to establish this new relation that is trying to be between different companies to work as a group and not as a rival

This paper analyses these different gadgets and at the same time that try to show their merits and limitations, their structure, activities and linkage between them, especially for the VCM. At the same time expose three significant examples to clarify better how a company works with a supply chain, with an Information Technology and a how does it works one of the most common IT as it is the extranet

They could be the key elements for the companies to throw ahead in their business and provide them with more economic benefits but at the same time agility, speed and differentiation

Keywords: Supply chain management; Value chain management; Customer Relation Management; Information Technologies; Agility; Speed; Competence; Relations; Differentiation.

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1. INTRODUCTION

1.1-Definitons

1.1.1-Value Chain Management

Value Chain Management is recognised as a contemporary concept that leads in achieving benefits of both operational and strategic nature. But how can these words be defined?

Currently “Management” is a usual word but is not easy to define. The most common definition is: “the organizational process that includes strategic planning, setting; objectives, managing resources, deploying the human and financial assets needed to achieve objectives, and measuring results that include recording and storing facts and information for later use or for others within the organization. [15]

For its part, the word “Value” is so abstract. First of all, one must recognise the distinction between ‘‘price’’ and ‘‘value’’. “Price” is assigned to goods and services at a level to attract customers and profit from their sale, whereas “value” has many definitions but generally they are not distinct. Common themes throughout these definitions are: “a numerical quantity measured or assigned or computed”, “the amount (of money or goods or services) that is considered to be a fair equivalent for something else” or “a trade-off between what the someone receives (e.g. quality, benefits, worth) and what he or she gives up to acquire and use a product or service (e.g. price, sacrifices)”. [25]

It is important to know the difference between these two words because pricing strategy is one of the elements in an organisation’s effort to manage customer value. The more overriding concern lies in the ability of the organisation consistently either to create improvements in the product or service that increase the buyer’s sense of its worth and reduce production costs throughout the chain.

Value Chain Management (VCM) could seem a topic too much general and it is not wrong, but inside the Value Chain Management there are lots of sub subjects to write about.

In this case, I will take a special attention in two sub activities: Supply Chain and Customer Relation because of the importance that they have inside the VCM and because they were the most relevant changes that Porter introduced.
Both terms existed before Porter but they had never been joined and linkage inside the companies so this permitted to create a new way of management.

1.1.2-Supply Chain Management

Supply Chain (SC) existed before Value Chain Management and had had different uses; some considered just the relation between suppliers and the company and others like a different way to have contact with the suppliers trying to have better contact.
SC was created because in the middle century suppliers were not seen as a "friend" of the company that could help to improve the benefits of the business; they were seen as an opponent. This situation created a lot of problems and fights between them. Finally someone realized that maybe with a better relation with suppliers and introducing them as part of the company both could have better profits. Now a days this relation has arrived to the point, that big companies just say which is the final product that they want and suppliers are who look for the best rows materials that can be used. This is an example of how the suppliers have been introduced inside the companies.
As the VC, the SC has different elements and activities inside the framework that can affect it. This elements change from one company to another depending of the size of it and how many products it sells. Big companies have a huge Supply Chain, very complicate to analyze because of the number of ramifications that exist and the different relation between one to the other, at the same time they use different Information Technologies to have continuous contact.

1.1.3-Customer Relation Management

In the case of the Customer Relation Management (CRM) it can be said that in today's competitive environment, finding and keeping customers is more critical than ever. It is also less costly to retain existing customers than it is to find new ones. It is for this that the concept of CRM has been developed as a strategic process for businesses to approach customer relations systematically and efficiently.

So, as a global, it can be said that CRM systems has been created to enable businesses to actively manage customer relations in an organized and strategic manner. In practice that means developing a company's methodologies, internal operations, software and Internet capabilities to be able to better address customer needs and, as a result, make customer relationships more profitable. [13]

So, using a CRM system, a business can keep track of key customer information such as contacts, communications, accounts, buying histories and preferences, matching customer needs with product and service offerings. Companies can analyse the data to identify their best customers, enrich and individualize customer contact, manage marketing campaigns, reduce customer response times and serve wider geographical regions.

1.1.4-Information Technologies and Information Systems

It is not possible to talk about SC and CRM without write about the Information Technologies (IT) because of its importance and the basic gadget that it is to help to connect the different activities to achieve the different goals of the VCM.

Before Information Technologies (IT) could be interesting to talk about the Information Systems (IS) that is a group of components interrelation between them that permit capture, process, collect and deliver information to make easier the coordination of the activities of the company, take decisions, fix targets and control. [24]

IS have different components like the people, the activities of information treatment, the computer equipments, the net, the programs, the technologies that IS use, facts, etc. A part of them there are the basic activities like capture, process and output information. The collect of information takes place inside the organization and at the same time the group of facts feed the IS. The process converts these facts in something useful for someone, the users. And at the same time the output make easier the processed information to the organization activities. We can identify a control activity from the same IS to evaluate the information and correct, if it is necessary, the collect, the processing or the output system.

Coming back to IT we can say that is a more general topic than IS because it could be simply defined as the use of hardware, software, services, and supporting infrastructure to manage and deliver information using voice, data, and video. In this

case normally all this information is shared from one company to another to make easier the direct contact between them. [24]

Nowadays IS and IT have passed to give support to the administrative activities, like accounting, wage packet, process orders from the clients, etc, to make possible the improvement in the management and finally achieve competitive advantages. It is totally necessary establish a plan for IS/IT that allows follow a more strategic management. This plan is understood as a previous step to the developing process of the IS/IT, the analysis, design, development, implantation, and maintenance of IS.

1.2-Objectives of the Thesis

This project has two big objectives; the first one is give to the reader an easy way to understand the goals, the framework, the activities and the different parts of the value chain management. This part includes an explanation about the supply chain, the costumer service and the new technologies in the business.

The second one, as a continuity of the first one, is give a visual example of how a Spanish company has implemented the Information Technologies and the Supply Chain in its business. This could help to understand better; more than just with an explication, how these two gadgets can improve the business or which problems and changes can appear inside the company because of them.

1.3-Structure of the Thesis

To achieve this purpose the document has been structured in seven main parts. The first one is a short historical context to see the evolution of the management from the ninety-fifth's until the present time. It is necessary to contextualize the evolution world's business to understand the reasons that have bring the management to use the Value Chain Management, the Supply Chain Management, the Customer Relation Management and the Information Technologies as a way to run the business as a global.

After this, it comes the four main parts of the project, first of all, the VCM that starts with an explication of what is it and continues with a resume of its framework, activities, costs and the other important parts inside it.

After, in the other three main parts, there is a more precise explanation of some of the different elements or subtopics of the VCM that need to be better analyzed. The first one is the supply chain management; this part starts with an historical context,

continuing with an explication of the concept, the elements, the supply chain research and the future research directions.

The second subtopic is the customer relation management (CRM); this part has been divided in five different sub parts that I consider the most interesting. First, there is an explanation about CRM, that continues with the five main pillars that a company has to follow to achieve success with CRM. As a third sub part we can find an explanation of the purpose of the CRM and finally there are the benefits and the problems that a company can have with its introduction

As a last subtopic, but not for this the less important, we can find the Information Technologies that includes an example of one of the most common IT in the present time as is the extranet. This example is to clarify better how this gadget is used for.

After the three main subtonics there are the two examples. The first one is how a Spanish company use the supply chain and the second one is how a Spanish company use an IT, in this case SAP. These two examples can help to understand better both utensils.

To finish, the last part are the conclusions of the project that includes my fillings, the conclusions that I have taken, the fillings of the two different companies that have been analyzed and the future evolution of the different topics. At the same time, I would like to resume some of the most important information that can be useful for the reader.

2. MANAGEMENT EVOLUTION

Before enter to the main purpose of this thesis, a short analysis of the different changes that has been in the world of business and the different ways of management that have been in the last half century could help to understand better the purposes of the Value Chain Management.

To start will be good in 1954 when the Department of the Air Force prepared and distributed for training and operational purposes: "The Air Force Manual 25-1, The Management Process". This manual established five functions of management: planning, organizing, coordinating, directing and collecting. This was in relation of military sense but it was important because it signalled a further interest in the study of management as a separate activity and emphasis on the study of management in the business concern.

In this period some people defined management as "the function of getting things done through others" [4]

In the 60's some authors where optimistic about management and about the idea that a theory could be developed. William Frederick said: "Within perhaps five years a general theory of management will be evolved, started and generally accepted in management circles". [11] During the period from 1960 to 1975, organisations had vertical type of structures and optimisation of activities was focused on functions. Relationships with vendors were winning–lose interactions, and many times adversarial. Manufacturing systems were focused on materials requirements planning (MRP) from the reflected demand in the production master plan, that calculate the components, subgroups and materials that will be the base to throw away the external and internal orders.

In the timeframe from 1975 to 1990, organisations were still vertically aligned but several were involved in process mapping and analysis to evaluate their operations. There was realisation by a number of these organisations of the benefit of integration of functions such as product design and manufacturing. Various quality initiatives, such as the total quality management (TQM), philosophies of Demingor Crosby, and ISO Standards for quality measurement were initiated by many organisations. The Malcolm Baldrige award and Shingo Prize for recognising excellence in these and other quality initiatives were initiated. Manufacturing systems were focused on

MRPII that a part of the physical necessities of components and materials it plans the products resorts.

In the middles of this era is where Porter writes two of his most famous books and starts to be a prestigious management writer. Porter made a significant impact on strategic management and changed its direction from case study to industry studies regarding structure, conduct and performance.

Is it necessary to say that before Porter had the idea of the value chain management Mckinsey & Co., in the beginnings of the 80's, had been working about this concept. Mckinsey consider that one business was a series of functions (market, production, human resources, research and developing, etc…) and the way to understand it was analysing each of this functions in relation of what the competence executed them. [4]

In relation of Mckinley's work, the suggestion that Porter did was to go farther of the analysis of the global function level and was necessary to divide every function in individual activities that constituted them, to an important key to distinguish between the different kinds of activities and the relations between them.

Starting in 1990, organisations all over the world were experiencing increasing national and international competition. Strategic alliances among organisations were growing. Organisation structures were starting to align with processes. Manufacturing systems were enhanced with information technology tools such as Enterprise Resource Planning (ERP), distribution requirements planning, electronic commerce, product data management, collaborative engineering, etc.

Design for disassembly, synchronous manufacturing, and agile manufacturing were some of the new paradigms in manufacturing. There was a growing appreciation in many organisations of total cost focus for a product from its source to consumption, as opposed to extracting lowest price from immediate vendors.

There were also an increased reliance on purchased materials and outside processing with a simultaneous reduction in the number of suppliers and greater sharing of information between vendors and customers. A noticeable shift took place in the marketplace from mass production to customised products. This resulted in the emphasis on greater organisational and process flexibility and co-ordination of processes across many sites. More and more organisations were promoting employee empowerment and the need for rule-based, real-time decision support systems to attain organisational and process flexibility, as well as to respond to competitive pressure to introduce new products more quickly, cheaply and of improved quality.

The philosophy of managing value chains was evolved to respond to some of these changing business trends and to try to adapt the companies to them.

3. VALUE CHAIN MANAGEMENT

3.1-Explanation

The first time that the term ‘Value Chain’ was used as a whole was in the book "Competitive Advantage: Creating and Sustaining superior Performance" (1985) written by Michael Porter.
This idea was built upon the insight that an organization is more than a random compilation of machinery, equipment, people and money. Only if these things are arranged into systems and systematic activates it will become possible to produce something for which customers are willing to pay a price. [20]
In other words, the organization is able to deliver a product or service for which the customer is willing to pay more than the sum of the costs of all activities in the value chain.

3.2-Value Chain Road Map

This definition could seem so simple but VCM is not easy to implement this is why it could be separated in five main pillars or steps considered that the company has to done to achieve the final purpose. This could be a way to help the firms to introduce the VCM and it could be named Value Chain Road Map

Fig 3.1: Value Chain Road Map [16]

As we can see in the figure 1 [16], the five pillars are: VCM Vision, Process Management, Partnership Approach, Agility and Speed and IT Integrated Infrastructure

VCM vision: Organisations that seek to achieve excellent and sustainable performance standards, using value chain principles will have to put in place a value creation, a mission/vision, based on extensive knowledge of the customer. Furthermore, they have to engage high leveraging capabilities of the organisation and which deliver their value proposition. They must use information and knowledge as the most valuable resource and this is more pertinent in a digital era, where real time decision-making is vital for competitiveness.

Process management: It is very that core activities of organisations are established, optimisation is delivered across the board, using modern tools, such as business process improvement, business process re-engineering etc. Processes are surrounded with measurement to ensure that the improvement is delivered and cost effectiveness is established and the value added is quantifiable. Furthermore, process management will ensure that processes are controlled to provide consistency and seamlessness and finally process management delivers effective management in a controlled work environment.

Partnership approach: It is essential for organisations in the modern business context to work through partnerships. VCM is based on the notion that partnerships are possible, so a strategy for enterprise relationships has to be put in place. Collaborative commerce has to be evidently visible through free sharing of information and the mutual leveraging of various capabilities. Organisations have the chance to improve their overall capabilities by enabling preferences and priorities of customers that can be addressed to ensure that the network supply continues to generate customer value and deliver consequential benefits for all parties concerned.

IT integrated infrastructure: The integration is a must if value chain is going to happen, and in an e-based environment IT integration has been established as one of the key challenges. It is therefore imperative that organisations facilitate the expansion of enterprise knowledge, by ensuring that information technologies are improved and optimised and by producing real time understanding of production processes, consumer demands and the activities of the various sub-processes that are essential for the value chain principle, but also which can be queried at any point in time.

Agility and speed: Agility is a consequence of various evolutions since the 1970's, organisations at that time tended to focus more on cost. This shifted to quality in the 1980's and speed became a pre-requisite in the 1990's.

Agility is essentially trying to customise mass customisation, by personalising the delivery of value through the provision of services and products to each customer around the globe. With IT and the Internet, this challenge can be made feasible.

3.3-Five Competitive Forces of Porter

Before Porter arrived to the value chain he made a structural analysis of industries that consisted in a reflection of the competitive strategy in a company. Porter said: "competitive strategy must grow out of a sophisticated understanding of the rules of competition that determinate an industry's attractiveness. The ultimate aim of competitive strategy is to cope with and ideally, to change those rules in the firm's favoured". [20]

He separated the rules of competition in five different forces: The Five Competitive Forces of Porter.

This five forces model developed guides, the analysis of organization's environment and the attractiveness of the industry. The five forces include the risk of new competitors entering the industry, threat of potential substitutes, the bargaining power of buyers, the bargaining power of suppliers, and degree of rivalry between the existing competitors.

He thought that an environmental scan has to be done to identify external opportunities and threats, to evaluate industry's overall attractiveness and to identify factors contributing to, or taking away from, the industry attractiveness. This factors will determinate industry probability because of they influence in the prices, costs and more different things, but this influence varies from industry to industry, and it can change as an industry evolves.

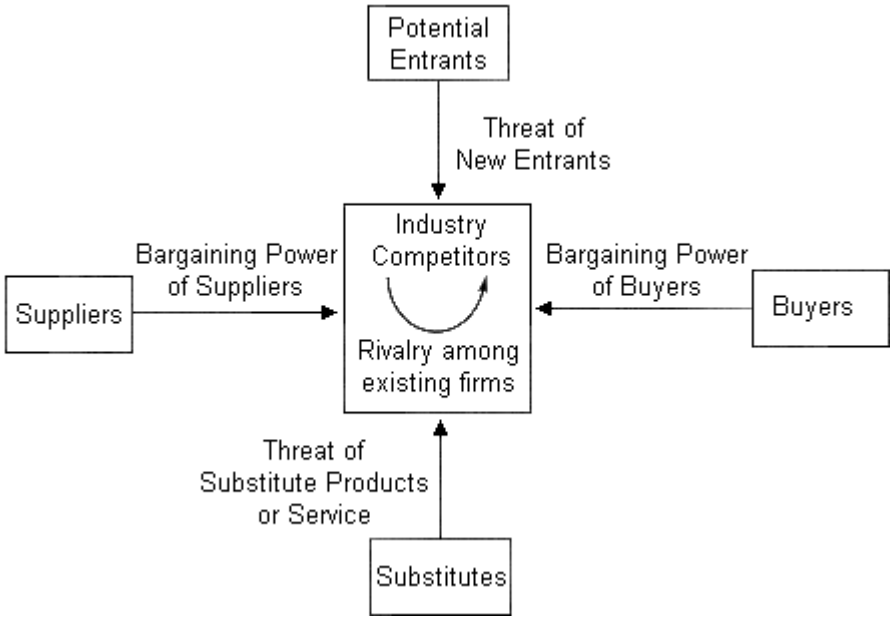

Fig 3.2: The Five Competitive Forces of Porter [25]

Porter creates this structure to help a firm to see through the complexity and specify those factors that could be critical to competition in his industry and to identify those strategic innovations that would most improve the industry's profitability but, of course, that was not the only structure and did not eliminate the need for creativity in finding new ways of competing in a firm.
Coming back to the main purpose (Value Chain), it can be said that it is more than the structure explained before, Value Chain is a way to analyse the management activity focus in that the leadership in low costs or the differences between the others depended of all the discreet activities that the enterprise was carrying out and separating them in different groups strategically.
Management could be with the capacity to understand the behaviour of costs and identify the existent or potential sources of differentiation. Therefore, it evaluates which value each particular activity adds to the organizations products or services, so the concept is based on the premise that every firm is a collection of activities that are performed to design, produce, market, deliver, and support its product.
The relevant "value" activities are defined as the physically and technologically distinct activities that a firm performs to achieve its objectives. State that a value chain is not just a linear flow of physical activities. [1] Emphasize that the value chain includes all the information that flows within a company and between a company and its suppliers, its distributors, and its existing or potential customers and that not only does information define and constrain the relationship among the various players in a value chain, but in many businesses it also forms the basis for competitive advantage.
So as has been shown there are two more important purposes than others in the value chain: decrease cost and embody the activities because, in essence, the value chain disaggregates a firm into its strategically relevant activities in order to understand the behaviour of costs for the purpose of control and more effective management.

3.4-Framework (Activities)

Porter developed the concept of the value chain to provide a framework for companies to critically analyze their activities for the purpose of realizing competitive advantage.
As has been said before, one important purpose to analyse in the value chain is to identify those activities that can give to the business some potential competitive advantages. To take advantages of these opportunities will depend of the capacities of the business to develop inside the value chain and better than his competence.

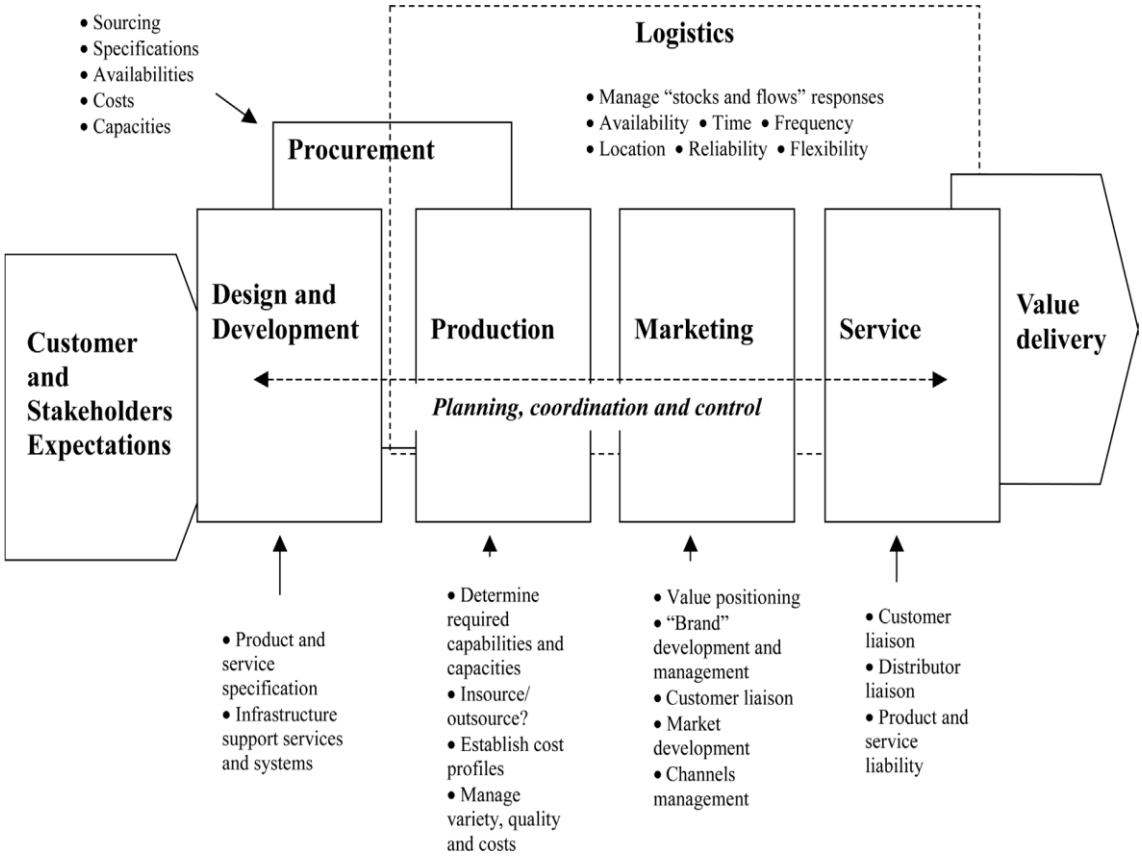

Fig 3.3: A generic Value Chain processes [6]

But, Porter went farther to the concept of value chain arriving to the value system, considering that the company is immersed in a complex group of activities executed for a big group of different actors that don not have to be inside the firm. This means that the management include some outside activities involve in the global production that never before were included in the group.

Porter starts his framework distinguishing his value chain between three different parts: The first two parts are two different groups of activities: primary and support and the third part is the Margin

3.4.1-Primary activities

They are directly concerned with the creation or delivery of a product or service. They are grouped into five main areas: Inbound Logistics, Operations, Outbound Logistics, Marketing and Sales, and Service. Each of these primary activities is linked to support activities which help to improve their effectiveness or efficiency. [7] It would be better to do a short description of all of them to know exactly which is the process that is done.

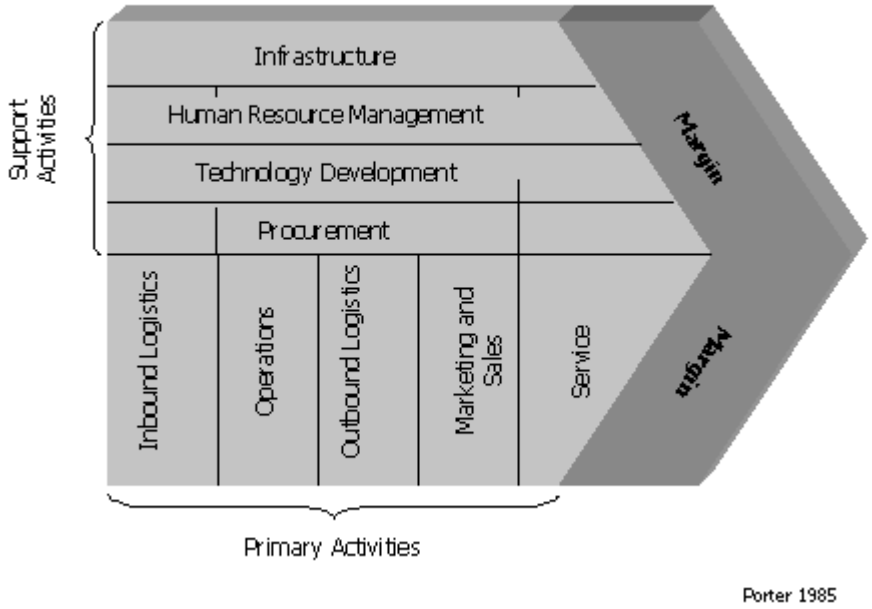

Fig 3.4: Basic Model of Porter of Value Chain [33]

Inbound Logistics: In this activity goods are received from a company's suppliers. They are stored until they are needed on the production and assembly line. Goods are moved around the organisation.

Operations: Is the step in which resources inputs (e.g. materials) are converted to outputs (e.g. products) and includes machining, packaging, assembly, equipment maintenance, testing and all other value-creating activities that are involve to achieve this purpose.

Outbound Logistics: Here are the activities required to get the finished product to the costumer; warehousing, order fulfilment, transportation and distribution management.

Marketing and Sales: This area focuses strongly upon marketing communications and the promotions mix, and it includes advertising, promotion, sale force, quoting and pricing

Service: Include all those activities with maintaining product performance after the product has been sold. This includes all areas of service such as installation, after-sales service, complaints handling or training.

3.4.2-Support Activities

They are not directly involved in production, may increase effectiveness or efficiency and are involved in competitive.

There are four main areas of support activities: Procurement, Technology Development (including R&D), Human Resource Management, and Infrastructure (systems for planning, finance, quality, information management etc.).

The description of them is:

Procurement: This function is responsible for all purchasing of goods, services and materials. The aim is to secure the lowest possible price for purchases of the highest possible quality. They will be responsible for outsourcing (components or operations that would normally be done in-house are done by other organisations), and e-purchasing (using IT and web-based technologies to achieve procurement aims).
Technology Development: Technology is an important source of competitive advantage. Companies need to innovate to reduce costs and to protect and sustain competitive advantage. This could include production technology, internet marketing activities, lean manufacturing, Customer Relationship Management (CRM), and many other technological developments.
Human Resource Management (HRM): As it is known employees are an expensive and vital resource so an organisation would manage recruitment and selection, training and development, and rewards and remuneration. The mission and objectives of the organisation would be driving force behind the HRM strategy.
Firm Infrastructure: This activity includes and is driven by corporate or strategic planning. It includes the Management Information System (MIS) and other mechanisms for planning and control such as the accounting department.

3.4.3. Margin

As a third part, Porter also derives the concept of "Margin" which is the difference between total value and the collective cost of performing the value activities [25]. Margin implies that organizations realize a profit margin that depends on their ability to manage the linkages between all activities in the value chain. The important thing of both activities is to achieve the maximum margin to have less cost and consequently more profits.
Within the whole value system, there is only a certain value of profit margin available. This is the difference of the final price the customer pays and the sum of all costs incurred with the production and delivery of the product and service (e.g. raw material, energy etc.). It depends on the structure of the value system, how this margin spreads across the suppliers, producers, distributors, customers, and other elements of the value system. Each member of the system will use its market position and negotiating power to get a higher proportion of this margin. Nevertheless, members of a value system can cooperate to improve their efficiency and to reduce their costs in order to achieve a higher total margin to the benefit of all of them (e.g. by reducing stocks in a Just-In-Time system).

3.4.4-External activities

As has been said before, we should take attention in the additional activities that are involved externally in the process. There are three that have more importance than the others.

Supply Chain: That creates and gives to the business the materials for the value chain. This is an important subtopic that will be after accurately explained.
Value Chain of the Channels: This includes all the mechanisms to deliver the woods to the final user or to the customer. The activities developed for the distributors of the product or services of the company affect the customer.
Customer Value Chain: It is one of the most important activities because it determinates the necessities of the costumer. As the SC, it will be better explained in another point.

3.5-Costs

As has been said before, costs are so important and need a special analysis as Porter did.
Each value activity has its own cost structure and the behaviour of its costs may be affected by linkages between other activities, outside or inside the firm.
This analysis of the costs is done to assign operating costs and assets to value activities, because after identifying its value chain, a firm must assign them. Operating costs should be assigned to the activities which they are incurred and assets to the activities that employ control or most influence their use. Assignment of assets is more complex than the other because they have to be valued in some consistent way.
It should be said that this assignment of costs does not require the precision needed for financial reporting purposes because an estimate is often enough.
It is also important to take attention to the behaviour of the costs. This behaviour depends of different structural factors that influence cost which Porter calls cost drivers. He separates the ten major drivers that determinate this cost behaviour of value activities, and they are: economies of sales, learning, pattern of capacity utilization, linkages, interrelationships, integration, timing, discretionary policies, location and institutional factors. All of them interact to determinate the cost behaviour of a particular activity and it impact will differ widely among value activities.
So, a firm, when conducting its value activities to generate a profit margin, incurs two different types of costs: production costs that are defined as those incurred during the physical or other primary processes necessary to create and distribute the goods or services being produced and coordination cost that includes the relevant costs of the information processing necessary to coordinate the work of people and machines that perform the primary processes. [28]

3.6-Linkages

A ‘linkage’ may be defined as an exchange of information goods and services as well as systems and processes between one or more entities or activities within the programme management lifecycle. [20] So it can be said that linkages are flows of information, goods and services, as well as systems and processes for adjusting activities.

But why are them so important? The answer is so easy, for Porter the value activity can not be understood by examining the activity alone because the value activity is affected by how other activities are performed and these linkages are crucial for corporate success.

The ability to coordinate linkages often reduce cost because can reduce the need of inventory throughout the firm and at the same time, linkages imply that a firm’s cost or differentiation in not just the result of efforts to reduce cost or improve performance in each value activity individually.

For Porter there are numerous of different linkages (between support and primary activities, between outside and inside firm’s activities…) but he separated in two kinds of linkages: Linkage within the value chain and vertical linkages with the value chain of suppliers and channels

Linkages between the value chain: The most important linkages are those between direct and indirect activities, activities that must be coordinated, and between activities that are alternative ways of achieve the purpose, for example: only if the Marketing & Sales function delivers sales forecasts for the next period to all other departments in time and in reliable accuracy, procurement will be able to order the necessary material for the correct date. And only if procurement does a good job and forwards order information to inbound logistics, only that operations will be able to schedule production in a way that guarantees the delivery of products in a timely and effective manner.

So when activities are linked can reduce the total cost of both or at least of one of them. Because with a better coordination in linkages, that lots of times, it can reduce the inventory that is typically a manifestation of a linkages between activities.

Vertical Linkages: In this case the importance replace into the activities that are around the company so these vertical linkages reflect the interdependencies between a firm’s activities and the value chain of suppliers and channels. They can be identified examining how the behaviour of suppliers and channels affects the cost of each of its activities and vice versa, but this job is not easy because to do it good it needs to understand so good the suppliers and channels value chain. [20]

With suppliers the most important thing is to centre on the suppliers product design, characteristics, services, quality, packaging and other processing. One of the most

clarify example of this linkage could be the frequency and timeliness of suppliers deliveries and a firm's raw material inventory.
In the case of linkages channels the location of a channel's warehouses and the channel's materials handling technology can influence a company's outbound logistics and packing costs. These linkages do not just help the company to reduce his costs it could help to be more flexible and more efficient for the new orders.

3.7-Differentiation

Differentiation is one of the targets that the value chain wants to achieve. This differentiation appears when a firm provides something unique that is valuable to buyers beyond simply offering a low price. This may appeal to a broad group of buyers in an industry or only to a subset of buyers with particular needs.
Porter states that differentiation grows out of the firm's value chain. Despite the importance of differentiation, its sources are often not well understood. Firms view the potential sources of differentiation too narrowly. They see differentiation in terms of the physical product or marketing practices, rather than potentially arising anywhere in the value chain. Successful differentiation strategy grows out of the coordinated actions of all parts of a firm, not just the marketing department. Virtually any value activity is a potential source of uniqueness. The procurement of raw material and other inputs can affect the performance of the end product and hence differentiation. [21]
Other successful differentiators create uniqueness through other primary and support activities. Technology development activities can lead to product designs that have unique product performance. Operations activities can affect on such forms of uniqueness as product appearance, conformance to specifications, and reliability. The outbound logistical system can shape the speed and consistency of deliveries. Marketing and sales activities also frequently have an impact on differentiation.
Table 1 [20] illustrates how any activities in the value chain can potentially contribute to differentiation. Even if the physical product is a commodity, other activities can often lead to substantial differentiation. Similarly, indirect activities such as maintenance or scheduling can contribute to differentiation just as do direct activities such as assembly or order processing.
A firm may also differentiate itself through the breadth of its activities, or its competitive scope. A number of other differentiating factors can result from broad competitive scope as: Ability to serve buyer needs anywhere, simplified maintenance for the buyer if spare parts and design philosophies are common for a wide line, single point at which the buyer can purchase, single point for customer service and superior compatibility among products

Table 3.1: Sources of differentiations in the Value Chain [20]

FIRM INFRASTRU-CTURE	Top Management Support in Selling Facilities that Enhance the Firm's Image Superior Management Information System				
HUMAN RESOURCE MANAGEMENT	Superior Training of Personnel	Stable Workforce Policies; Quality of Work Life Program; Programs to Attract the Best Scientists and Engineers.		Sales Incentives to Retain Best Salespersons; Recruiting Better Qualified Sales and Service Personnel	Extensive Training of Service Technicians
TECHNOLOGY DEVELOPMENT	Superior Material Handling & Sorting Technology; Proprietary Quality Assurance Equipment	Unique Product Features; Rapid Model Introductions; Unique Production Process or Machines; Automated Inspection Procedures	Unique Vehicle Scheduling; Software; Special Purpose Vehicles or Containers	Applications Engineering Support; Superior Media Research; Most Rapid Quotations for Tailored Models	Advanced Servicing Techniques
PROCURE-MENT	Most Reliable Transportation for Inbound Deliveries	Highest Quality Raw Materials; Highest Quality Components	Best Located Warehouses; Transportation Suppliers that Minimize Damage	Most Desirable Media Placements; Product Position and Image	High Quality Replacement Parts
	Handling of Inputs that Minimizes Damage or Degradation; Timeliness of Supply to the Manufacturing Process	Tight Conformance to Specifications; Attractive Product Appearance; Responsiveness to Specification Changes; Low Defect Rates; Short Time to Manufacture	Rapid and Timely Delivery; Accurate and Responsive Order Processing; Handling that Minimizes Damage	High Advertising Level and Quality; High Sales Force Coverage and Quality; Personal Relationships with Channels or Buyers; Superior Technical Literature & Other Sales Aids; Most Extensive Promotion; Most Extensive Credit to Buyers or Channels	Rapid Installation; High Service Quality; Complete Field Stocking of Replacement Parts; Wide Service Coverage; Extensive Buyer Training
	INBOUND LOGISTICS	**OPERATIONS**	**OUTBOUND LOGISTICS**	**MARKETING & SALES**	**SERVICE**

To achieve the purpose the firm has to do an extra work trying to coordinate in a consistency way all the activities that are involved in the process.

According to Porter, differentiation can also stem from downstream. A firm's channels can be a potent source of uniqueness, and may enhance its reputation, service, customer training, and many other activities. Selective distribution through well-chosen outlets has also proven to be an extremely important source of differentiation.

Firms can enhance the role of channels in differentiation through actions such as the following: Channel selection to achieve consistency in facilities, capabilities, or image, establishing standards and policies for how channels must operate, provision of advertising and training materials for use by channels or providing funding so that channels can offer credit

Porter (1998) explains that firms confuse the concept of quality with that of differentiation. While differentiation encompasses quality, it is a much broader concept. Quality is typically associated with the physical product. Differentiation strategies attempt to create value for the buyer throughout the value chain. [19]

3.8-Uniqueness

Another point that Porter takes a special attention are the Drivers of Uniqueness. A firm's uniqueness in a value activity is determined by a series of basic drivers. Uniqueness drivers are underlying reasons why an activity is unique. Without identifying them, a firm cannot fully develop means of creating new forms of differentiation or diagnose how sustainable its existing differentiation is. [20]
The principal uniqueness drivers for Porter are the following:
Policy choices: Firm makes policy choices about what activities to perform and how to perform them. Such policy choices are perhaps the single most prevalent uniqueness driver.
Some typical policy choices that lead to uniqueness include product features and performance offered, services provided, intensity of an activity adopted, technology employed in performing an activity, quality of inputs procured for an activity, procedures governing the actions of personnel in an activity, skill and experience level of personnel employed and training provided, and information employed to control an activity.
Linkages: Uniqueness often stems from linkages within the value chain or with suppliers and channels that a firm exploits. Linkages can lead to uniqueness if the way one activity is performed affects the performance of the other. There are three types of linkages; linkages within the value chain, supplier linkages and channels linkages.
Timing: Uniqueness may result from when a firm began performing an activity. Being the first to adopt a product image, for example, may pre-empt others from doing so and make the firm unique.
Location: Uniqueness may stem from location. For example, a retail bank may have the most convenient branch and automatic teller machine locations.
Interrelationships: The uniqueness of a value activity may stem from sharing it with sister business units. Sharing a sales force for both insurance and other financial products may allow the firm to offer the buyer better service.
Learning and spillovers: The uniqueness of an activity can be the result of learning about how to perform it better. Achieving consistent quality in a manufacturing process may be learning-driven, for example. The spillover of learning to competitors erodes its contribution to differentiation.

Integration: A firm's level of integration may make it unique. Integration into new value activities can make a firm unique because the firm is better able to control the performance of the activities or coordinate them with other activities. Integration may also provide more activities to be sources of differentiation.
Scale: Large scale can allow an activity to be performed in a unique way that is not possible at smaller volume. In some cases, however, scale can work against the uniqueness of an activity. Scale may, for example, reduce the flexibility of firms in some time-sensitive industries.
Institutional factors: Institutional factors sometimes play a role in allowing a firm to be unique. Similarly, a good relationship with its union may allow a firm to establish unique job definitions for employees.
The drivers of uniqueness vary for each activity and may vary across industries for the same activity. The drivers interact to determine the extent to which an activity is unique. A firm must examine each of its areas of uniqueness to see what driver or drivers underlie it. This will be critical to the sustainability of differentiation because some uniqueness drivers provide more sustainability than others. Understanding what allows a firm to be unique will also ensure that a firm does not undermine the causes. Finally, the drivers of uniqueness may suggest new sources of differentiation. [20]

3.9-Strategic Position

Another interesting point to talk is the strategic positioning It was defined by Porter in 2001 [22] as doing things differently from competitors, in the way that delivers a unique type of value to customers. This can mean offering a different set of features, a different array of services, different logistical arrangements, or deliberately choosing a different set of activities to deliver a unique mix of value. Positioning is not only about carving out a niche. A position emerging from any of the sources can be broad or narrow. [23]
Strategic positions emerge from three distinct sources, which are not mutually exclusive and often overlap. First, positioning can be based on producing a subset of an industry's products or services. Porter calls this variety-based positioning because it is based on the choice of product or service varieties rather than customer segments. Variety-based positioning makes economic sense when a company can best produce particular products or services using distinctive sets of activities.
A second basis for positioning is that of serving most or all the needs of a particular group of customers. Porter calls this needs-based positioning, which comes closer to traditional thinking about targeting a segment of customers. It arises when there are groups of customers with differing needs, and when a tailored set of activities can serve those needs best. Some groups of customers are more price sensitive than other,

demand different product features, and need varying amounts of information, support, and services.
The third basis for positioning is that of segmenting customers who are accessible in different ways. Although their needs are similar to those of other customers, the best configuration of activities to reach them is different. Porter calls this access-based positioning.
If there were only one ideal position, there would be no need for strategy. Companies would face a simple imperative - win the race to discover and pre-empt it. The essence of strategic positioning is to choose activities that are different from rivals. If the same set of activities were best to produce all varieties, meet all needs, and access all customers, companies could easily shift among them and operational effectiveness would determine performance.

3.10-Substitution

3.10.1-Explanation

Another point that Porter considered interesting to talk about is the substitution, that in its simplest form is considered the process by witch one product or service supplant another in performing a particular function or functions for a buyers. In the more complex forms of substitution, a substitute performs a different range of functions that an industry's product and/or affects buyers activities in a different way. At the same time, substitution plays a prominent role in determining industry and firm's demand because as has been said before it is one of the five competitive forces determining the probability of an industry. [20]
Porter wanted to solve two questions: how a firm can fight or defend against a substitute and in the other hand how a company can use the substitution if it is on the offensive.
To answer these questions first of all the firm has to identify substitutes an industry faces. It requires searching for products or services that perform the same generic function as an industry's product, rather than the product that have the same form. It is necessary too, to include products that can perform functions in addition to those of an industry's product, as well as products that can perform any significant function among those industry's products can perform
It have to take attention than while one usually thinks of substitutes only in terms of different products, in many industries there are at least four other options that must be considered as substitutes in a broad sense. These options are:

1-that the buyers do not purchase anything at all to perform the function
2-lower the usage rate of the product required
3-used, recycled or reconditioned products
4-Backward integration

The number of substitutes for an industry's product will vary widely from industry to industry. Potential substitutes will differ in how they replace a product and in the level of threat they represent. It is important in substitution analysis to begin with the longest list of potential substitutes, because firms are much more prone to be blindsided by a substitute than to take a particular substitute so seriously.

After identify the substitutes in the industry it is time to describe some principles of defense against substitutions and promoting substitutions.

3.10.2-Defense against substitutions

In this case the first thing to do is to identify all of them, as it is known this is not an easy task. Strategies to combat substitutes are the reverse of many of the steps described next.

-improve the Relative Value/Price (RVP) relative to the substitutes by reducing costs, improving the product, improving complementary goods, etc

-modify the product image

-raise switching costs

-block pull-through attempts by aggressive selling efforts directed at the buyer's buyers

A number of other possibilities in defending against substitutes warrant consideration as the following ones:

-Find new uses unaffected by the substitute

-Redefine competition away from the strengths of the substitute

-Enlist suppliers to help in defense

-Redirect strategy toward segment least vulnerable to substitution

-Harvest instead of defend

-Enter the substitute industry

3.10.3-Creating or promoting substitutions

The following concepts for promoting substitution can be considered, could be more but this are witch I consider the most interesting:

-Target early switchers: Some buyers in an industry will be much more likely to adopt a substitute than others because of greater Relative Value/Price (RVP) from the substitutes, lower switching costs, or greater propensity to switch.

-Improve the firm's offering in area with the highest RVP impacts: The impact of improvements in the product and elsewhere in the value chain on substitution will be greater the more RVP is affected.

-Reduce or subsidize switching costs: Investments to reduce switching costs can have a major role in stimulating substitution, presuming a substitute has superior RVP.

-Invest in signalling: A major barrier faced by a substitute may be the lack of awareness and knowledge by potential buyers.
-Promote improvements in complementary products or infrastructure: A company can often improve RVP or switching costs if it can simulate improvements in the costs or quality of necessary complementary goods.
-Conceive of new functions to widen a substitute's market: Conceiving of new functions a substitute can perform may greatly expand the potential market. [20]

3.11-Benefits of the Value Chain

There are numerous benefits to be accrued from adopting the principles of VCM. These can be classified as organisational, economical and strategic competitive benefits.
First and foremost, VCM provides organisations with the opportunity to develop their value proposition but before they have to identify their core competencies and position themselves in the market place, according to their strengths and competitive abilities.
Secondly, VCM provides organisations with the opportunity to establish chains that create value and drive out cost and bring in customer needs and wants. In other words, it is about developing synergy levels and seamlessness, between the various activities involved in converting the customer needs into tangible outputs.
Thirdly, it is about creating customer focus and through a continuous, uninterrupted relationship with the customers. Information can flow both ways and, therefore, create focus which is so necessary in the modern business environment that requires organisations to move speedily, to be flexible and agile.
The other benefits of VCM include the development of partnerships with suppliers and with other stakeholders. Indeed, technology enables organisations to network on a wider scale and ensures that the customer is better served. Cost advantage is another benefit, which can be accrued from focusing on the customer in a value creation, value added manner. Optimising activities and establishing the inter-dependency between the various processes can drive out costs out through quality improvement and through optimisation.
Agility is a must in a modern business environment, indeed the ability to innovate, to be responsive, flexible, cost effective, is the only way to distinguish between various competitors. In this case Value Chain tries to establish a flexible and fast work in the firm to have the agility necessary to answer the orders as soon as they arrive.
Lastly, the ability to manage the network through the information flow, the knowledge base and the databases that customers, suppliers and other stakeholders can access, will enable firms to compete effectively.

The framework advocates that managers, through the organisation's mission and strategy, create the organisational system that facilitates the use of process management. In turn, the use of process management practices create and maintain an organisation culture that supports value management and the ability continuously to improve the organisation's processes, products, and services to enhance customer success. Feedback mechanisms throughout the organisation continue to fine-tune the organisational system and processes.

By focusing on the key elements of value management, a company can develop a stable customer base and become an integral part of their continued success, thereby developing a competitive advantage.

In value management, one of management's primary duties becomes that of developing and maintaining an organisational system in which value can be continuously created. Management must develop training programs to upgrade levels of competence; work with employees to provide appropriate reward systems; share control and information; and empower employees. It is essential to use the potential of computers and cross functional information systems to enable an organisation to go flat, reduce response time, and allow managers to be closer to the customer because closeness to the customer appears to provide management with the information to support and maintain their change efforts.

3.12-Critical success factors

It is however, not easy to adopt the principles of VCM and to accrue the benefits explained before. Value chain has several problems to be adjusted by some companies, because as a way of management, it involves so many changes and new intentions. So can be said that the most important challenge and problems that the companies have at the beginning are:

Value chain optimisation: As has been said, VCM has been created to achieve better benefits so one of the main purposes is to optimise, but some companies agree that the price pressure for modernising is one of the challenges that they are facing.

Value chain performance: Looking some companies that have incorporated the VCM it seems that not many organisations can claim to be very effective at using the VCM principles and optimising their performance in this sense.

Value chain strategy: In this case, one of the critical problems that many organisations are facing is in their inability to put together a value chain strategy, which is systematic and based on their future requirements. Most organisations seem to be starting this process, but do not have it crystallised and well documented already. Furthermore, on the effectiveness of value chain strategy, it goes, they say that because they do not have systematic value chain strategies in place, the assessment of their value chain strategy is somehow not very complementary.

Value chain information sharing: As to information shared with value chain partners, it is very interesting to note that some companies acknowledge that their organisations still share information which relates to the transactional side and which focuses on aspects related to the product, rather than information which looks at strategy and the long term vision of their partners. Sometimes still happens that when it comes to customers, the information shared is again to do with products and services, rather than the strategic aspects and the sales forecasts. Similarly for suppliers, the information that is shared willingly tends to be related to products and services and the least shared information is on strategic aspects and sales order aspects.

4. SUPPLY CHAIN MANAGEMENT

4.1-Explanation

To start with this topic it can be useful to explain the different ways that a Supply Chain Management (SCM) has been used for, because there have been some many views of the (SCM) in the last twenty-thirty years depending of the writer who used it.

There have been some writers, like (Cavinato, 1992; Ellram, 1991) , that have restricted the view of the SC to just the "relational" activities between a buyer and seller. Such an approach focuses on the first-tier purchasing operations of a firm, and relationships with suppliers that might be characterized by such arrangements as buyer-seller alliances and partnerships. [39]

A second use of supply chain takes a broader view by including all "upstream" suppliers to a firm as part of the supply chain as (Dobler & Burt, 1996) said. With this definition, an original equipment manufacturer like Ford Motor Company would view its supply chain as containing all first-, second-, etc., level suppliers in the supply network. [40]

A third view, and the most interesting for this project, takes a "value chain" approach, in which all activities required to bring a product to the marketplace are considered part of the supply chain (Porter, 1985; Davis, 1993; Lee & Billington,1995). This view adds manufacturing and distribution functions as part of the flow of goods and services in the chain. [20][33]

So the meaning of supply chain management depends upon how the user defines the domain of the area.

4.2-Logistics

The same happens with logistics but the problem is that so many times, logistics and supply chain has been mixed, and have been considered as the same. Actually, logistics takes an important part inside the SC, for this reason could be interesting to define it to understand better the differences between them.

For The Council of Logistics Management's (CLM) the definition of logistics is the next one: Process of planning, implementing, and controlling the efficient, cost-effective flow and storage of raw material, in-process inventory, finished goods and

related information from point of origin to point of consumption for the purpose of conforming to customer requirement

In other words, is the integral part of the SCM that plans, implements and controls the efficient flow and storage of raw materials, half-finished products, products finished and the information relative from the point of origin to the one of consumption in order to adjust to the necessities of the clients. [14]

The definition suggests a stronger emphasis on managing the flow and storage of material, whereas the earlier supply chain concept placed greater weight on network design elements such as facility network and product development.

It is obvious that significant overlap exists between the ideas and concepts that define supply chain management and logistics management. Although both have similarities, practitioner applications and areas of research vary greatly due to circumstance. Practicing managers and academic researchers need to be aware of the tremendous body of knowledge, that has applicability in both management paradigms.

4.3-Supply Chain

Coming to the main purpose of this point: (the Supply Chain inside the Value Chain), I can say that such a holistic approach is consistent with the integrated way today's global business managers are planning and controlling the flow of goods and services to the market place because, as has been said, today, firms are not only sourcing and selling their products internationally, they are also taking advantage of global product development support.

In the earlier years, the emphasis inside the SC was on materials planning, utilising materials requirements planning techniques, inventory logistics management with one warehouse multi-retailer distribution system, and push and pull operation techniques for production systems.

In the last few years, however, there has been a renewed interest in designing and implementing integrated systems, such as ERP, multi-echelon inventory, and synchronous- flow manufacturing respectively.

To understand better all this concept it is easier with the structure showed in figure 5 [10] where are shown all the elements that take part on it.

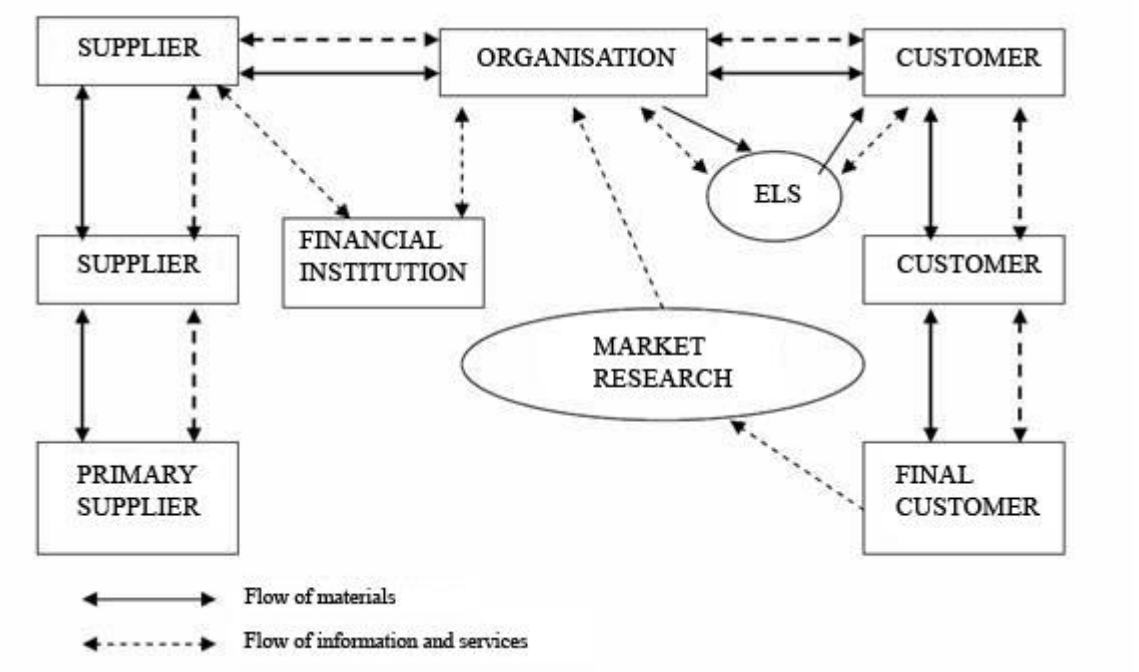

Fig 4.1: Supply Chain Management [10]

The management focuses from the first link (primary supplier) to the last one (end user or final customer) and not solely administers the flow of materials but the information flow and services, being so important the first of them like the other two. In addition the frame of the relations beyond suppliers and clients of physical products is extended, including the financial institutions, the external logistic suppliers (ELS) and the consulting companies of markets. So, in this way, SCM is understood as the systematic and strategic coordination of the traditional functions of business inside an individual company and throughout all the implied ones in the supplying chain, in order to improve yield of each unit of business like the chain in global.

So it can be said that three elements are therefore remarkable from the common SCM. First, involve the coordination and integration of numerous organizations of the chain until the end; from the supplier of the supplier to the client of the client.

Secondly, it includes the bidirectional flow of goods, services, information and abilities between the components, taking a perspective from investigation of the operations and technology of the information.

Finally, is generally accepted the notion of objective with the implantation of a SCM, nevertheless this objective varies based on the analysis perspective. This way under a perspective of dynamic of system, the goal to obtain is to equal demand and

associated production with the problematic associated of management of the production in inventories. From a perspective of investigation of operations and technology of the information the objective is the minimización of the cost of the product flow from a given service level. If we took the organizacional point of view, the last aim it is the suitable election of the organizational form to adopt in terms of horizontal and/or vertical integration. Finally under the optics of marketing the objective is the satisfaction of the consumer and diminution of the costs in the channel.

Numerous authors, as Porter, have indicated the importance that has an integral management of the chain of supplying for the attainment of a sustainable competitive advantage. In this sense, the gains are derived from the narrow collaboration between the members of the chain at the time of planning and executing the operations.

I took some advantatges or gainss that I considered the most relevant or important that a firm can achieve with a good application of the SC:

Reduction of the level of inventories in all the channel. This reduction is consequence of the better coordination between the organizations at the time of fitting the productions to the demand. The adoption of a SCM philosophy implies the management of the totality of inventories of the channel, concentrating the efforts in the reduction of which they are superfluous and dragging, as far as possible, the greater physical volume of products stored towards the primary links of the chain. At the most back in the chain are the inventories smaller will be the global cost of their maintenance.

Reduction in total costs in the supplying chain. This reduction is consequence of the greater volume of inventories than it also implies a smaller cost of storage and investment in capital and of the greater labor productivity.

Temporary Horizon of long term. The relations of coordination between the members of the chain under a SCM optics are based on the confidence and commitment, it allows to happen less to detailed contracts. Less expensive contracts to write up reducing to the costs of transaction and the possibility of opportunistic behaviors. Additionally, it allows the distribution of risks and you compensate through one narrow relation in the channel.

Diminution of the time of the cycle of the product from the raw materials of origin to the finished product that arrives at the consumer. The necessary time is reduced to

thanks to the most efficient management of inventories and the flow of information of the elements of the supplying chain.

To know the level of benefits that the implantation of the supply chain can achieve it is important to find which are the "signals" that are expected to be in a firm that has its implementation. The identification of these elements will allow to know if the company will obtain high, normal or small levels of performance.

To reduce the number of signs that could take part in the analysis of the SC I will consider just four characteristic dimensions of a SCM strategy, for me, the most important.

The design of products specifically for each client. Design specifically the products that the organization sells for each client supposes a strategic orientation towards the differentiation and a turn towards the last link of the chain to manage

The use in the productive process of a flexible production system. The use of flexible production systems is tie with the previous characteristic, because a specific product design requires of a great necessity of change in molds and matrices of habitual form. Nevertheless, the implantation of a flexible production system not only implies a narrowing of the relations with the later links but also with the previous ones. The peculiarities of the supplying necessities make the necessary of long term contracts in which the confidence and reputation of all the parts play the most important role, also in multiple occasions the own supplier uses the same facilities of the company client in a pattern of symbiotic behavior.

The existence in agreements of technological collaboration with clients and the existence in agreements of technological collaboration with suppliers. Finally the existence in agreements of technological collaboration of technological suppose one step more in the integral management of the chain of until the point of which, as some affirm "it is impossible to use the term supply chain without the explicit reference to the innovation".

In the figure 6 [3], we can see with a graphic the roll of these four characteristic variables of a SCM strategy.

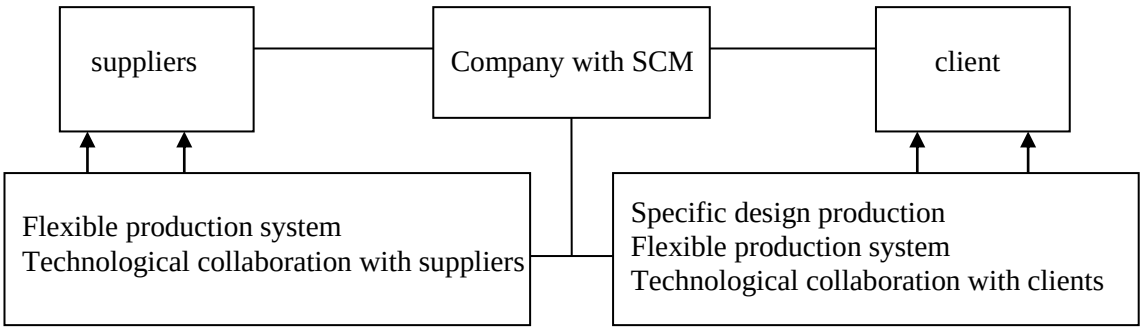

Fig 4.2: Characteristic elements in a SCM. [3]

4.4-Supply Chain Research

An interesting part of the supply chain could be the supply chain research that is not a recent phenomenon. Probably the first comprehensive investigation and demonstration of supply chain interdependence was conducted by Jay Forrester (1961) and reported in Industrial Dynamics. Over the last 40 years, hundreds of researchers have addressed various tasks such as shop floor control and vehicle routing within the different stages of the supply chain, and some have included the linkage between stages such as vendor-buyer partnerships.

But first, I would like to note a number of general research areas that have made significant contributions to a better understanding and management of the elements and tasks within the supply chain

First, an analysis of the general location and transportation problem research, the facilities location problem has been a fruitful research area, with the typical problem structure represented by a network of facilities (nodes) connected by a set of flows (arcs). Flows of materials from suppliers to the ultimate customer are modeled to determine which plants should produce which products, what transportation options should be used, and which distribution centers should be opened. Both mathematical programming and simulation have proved to be useful tools for investigation.

A closely allied research area to the location and transportation problem is the multi-echelon inventory decision: this deal with both consumable and repairable supply items and focuses upon the quantity, timing, and location of material in the chain. Simulation and analytical modeling have been used to help establish inventory levels and ordering policies between stages. Recognizing that uncertainty exists in managing the flow of material, important performance criteria such as cost and

customer service are used to evaluate different inventory management operating strategies within the supply chain.

Real-time control of material and information flow is a cornerstone of improved supply chain performance. A number of researchers have investigated various sequencing and dispatching procedures for manufacturing parts within plants, whereas other investigators have looked at routing vehicles to distribute products to customers.

Critical to this flow control is information movement via EDI within the firm and between stages in the supply chain.

It is important to say again that a firm relationship developed between suppliers and customers for shared benefit, and joint venture arrangements when entering new markets. Alliances and partnerships have been increasing in our global business environment, and understanding their structure and management is critical to their success.

Finally, a supply chain is composed of numerous operations, and technological change influences the operation's process development implemented in the chain. Changes in materials, hardware, tooling, transportation, material handling, packaging, etc., ultimately control the performance of the supply chain. During the last decade numerous developments in manufacturing, such as cellular manufacturing and automated material handling, have greatly increased throughput rates and responsiveness of plants (Black, 1991). Also, developments within telecommunications have complemented other technologies such as microprocessors, EDI, global positioning systems, etc., providing organizations with access to operational real-time information never before available. [37]

4.5-Future research directions in the supply chain.

Could be interesant to have a view of which are the future ways of the SCM, because with changing dynamics due to global competition and new technological advances in numerous areas, SC can change a lot an future researchers interested in how this will affect and how it will change.

I have choosen some areas that I consider the most interesting because they are in need of greater investigation than other, but all the SC as a global will need a future research.

Greater development of linked detail planning and control models for vertically integrated firms on the supply chain is the first thing that needs to be done, with inclusion of all stages of the chain. A number of current researchers have done an excellent job of developing procedures, optimal and heuristic, that help the supply chain to improve performance. This work has primarily concentrated on the manufacturing and distribution part of the chain. Further work is needed to exploit the shared organizational data.

Although vertically integrated firms normally share detail operating data, such is often not the case for non-vertically integrated firms. Therefore, a different approach may be necessary for these firms. An alternative would be the development of linked rough cut planning and control models for coordination of non-vertically integrated firms on the supply chain. These models would both utilize more available aggregated data and focus more on risk analysis.

It has been recognized in the quality area that product design is a fundamental element in keeping quality-related costs low. The same is true for the supply chain. For example, fewer components in a product means fewer suppliers and service parts. Therefore, future researchers need to explicitly include the product development function and its impact on the supply chain configuration.

As was noted with product design, how process development activities are employed also can greatly impact supply chain performance. For example, if a firm uses a postponement strategy to configure the product closer to the point of use, the packaging and material handling processes are influenced. Because of this, the researchers believe the explicit inclusion of the process development function that influences design issues in manufacturing, material handling, packaging, information technology, and transportation need to be present when evaluating the supply chain configuration.

It is obvious that the supply chain management paradigm has been appropriately targeted and applied to manufacturing firms producing and marketing products for both domestic and international markets. The question to be raised is its applicability and value to the non-manufacturing sector. I think that future researchers should explore the application of the supply chain concept in nonmanufacturing settings,

like financial services and health care, to determine its robustness and overall value. [18]

5. COSTUMER RELATION MANAGEMENT

5.1-Explanation

Costumer Relation Management (CRM) is world-wide known by the directors of the companies, but as the companies were converted to be parts of global corporations, with great amounts of clients, they left to the client in background, causing that the service became impersonal, anonymous and of a standardized and foreseeable quality. This situation caused that the companies must begin to study more in detail cost-benefit from the implementation of the CRM systems, to survive in the competitive and volatile markets highly of the present time. The profit of this tool will be delimited by the innovating capacity of the company that applies it, making clear that to greater innovation, greater will be the probability of being crossed successful.

CRM is a strategy to identify, to attract and to retain the clients with effective processes that help to satisfy the present necessities and to know the potential necessities. The neuralgic centre of the CRM is the client, and for that reason the areas of the company more susceptible to start up this strategy are the commercial departments of marketing and the attention to the client, extending later to the rest of departments.

Unlike for years in which the product was the main preoccupation of the companies to compete in the markets, at the present time the production systems are so developed and therefore the costs very are fit. The battlefield now is in the client. Fidelity and to maintain them is fundamental for the good development of the business and for that reason, CRM and all its philosophy is being applied in the companies and are in mind of all businessman.

The main characteristics of the CRM are: Maximize the information of the client, identify new opportunities of business, improvement of the service to the client, optimized and customized processes, improvement of supplies and reduction of costs, identify the potential clients who greater benefit generate for the company, fidelity to

the client, increase the sales as much by increase of sales to present clients like by crossed sales.

The companies that count with this technology will present a competitive advantage respect to their competitors, anticipating themselves to the necessities of the clients, simultaneously whom the level will increase of the service and will generate many opportunities of contact between client/supplier.

5.2-Pillars

It is very important to emphasize that to achieve the success in this type of projects firms have to consider the four basic pillars in a company: strategy, people, processes and technology.

Strategy: The implantation of CRM must be aligned with the corporative strategy and in harmony with the tactical operative requirements. The correct process to implant CRM is to answer the requirements of the strategy with it relations with the clients and never, to be implanted without being coherent with them.

People: The implantation of the technology is not sufficient. In the end, the results will arrive with the correct use that the people do of her. The total approach had to manage the change in the culture of the organization looking for the client on the part of all its members. In this field, the technology is totally secondary and elements like the culture, the formation and the internal communication are the tools key.

Processes: The redefinition of the processes to optimize the relations with the clients is necessary, obtaining more efficient and effective processes. In the end, any implantation of technology results in the processes of business, doing them more profitable and flexible.

Technology: Also it is important to emphasize that there are solutions CRM for all size of organisations and sectors although the necessary solution in each case will clearly be different based on its necessities and resources.[12]

5.3-Purposes

But CRM it is more than this, according to the industry, the four major purpose of it can be: First, helping an enterprise to enable its marketing departments to identify and target their best customers, manage marketing campaigns with clear goals and objectives, and generate quality leads for the sales team.

Second, assisting the organization to improve telesales, account, and sales management by optimizing information shared by multiple employees, and streamlining existing processes (for example, taking orders using mobile devices)
Third, allowing the formation of individualized relationships with customers, with the aim of improving customer satisfaction and maximizing profits; identifying the most profitable customers and providing them the highest level of service.
Fourth, providing employees with the information and processes necessary to know their customers, understand their needs, and effectively build relationships between the companies, its customer base, and distribution partners.

5.4-Problems

CRM is not a perfect gadget and can have some problems because of different reason. The most common reasons for failure of the CRM are:
To think that the technology is the solution. The technology only has sense after having perfectly defined the business objectives. In a study of the CRM Forum it is indicated that only in a 4% of the cases with problems, these have had to the adopted solution with which is observed that the technology is not the critical element in projects CRM. [8]
Lack of support for part of the direction due to the lack of knowledge of the opportunities that the CRM offers. If the direction of the firm do not trust in this gadget or they do not have the enough information to know how to use it is obvious that the other workers of the company will not take the maximum benefit of it.
Lack of vision and strategy. It is a habitual problem not to have a strategy defined clearly and, therefore, measurable objectives of business in the CRM area. In addition, the problem is increased when it does not exist a correct allocation of resources and a correct methodology for the development of the project.
Not to redefine the processes. Like in another type of technological projects, it is necessary to redefine the business processes to obtain the wished results. It is needed to redefine the way in which the things in the organization become to obtain results.
Bad quality of the data and information. One of the CRM pillars is the knowledge of the client (to customer intelligence) and within this concept the quality of the data and information is basic because from them it is of whom conclusions are extracted.

Problems with integration. A study aims that less of a 10% of the polled firms have integrated his CRM with his ERP or their "data warehouse". [45]

Not to manage the change correctly. Like any project of spread, is necessary a correct management of the change and the organisational culture.

Little implantation of analytical CRM. The analytical part of CRM is in charge to draw conclusions on the present and potential clients from great amount of data. Without the analytical part, a global vision of the client and therefore most of the advantages is not obtained that CRM offers. [45]

In addition, there would be also causes due to the immaturity of the market: solutions little evolved and validated, lack of "vertical" solutions, lack of specialized consultants, etc.

Most of projects CRM they begin with great expectations: increase of income, reduction of costs, increase of the satisfaction of the client, information in real time, etc. obtaining internal clients as much as external more faithful.

6. INFORMATION TECHNOLOGIES AND INFORMATION SYSTEMS.

6.1-History

First of all, before talk about the Information Technologies, it would be interesting to contextualize the changes and adjustments that have been in the business technologies and talk about the Information Age that describes the general use of technology to transmit information in the modern era.

Managers realized that they could profit from immediate knowledge of relevant information. The telegraph was the first instrument to transform information into electrical form over long distances. The telephone, radio, television, and computer expanded instant information. Computers store and handle a vast amount of data, automate manufacturing, and enhance modern communication systems. The mainframe in the 1970's, the PC in the 1980's and the office network in the first part of the 1990's were the platforms that drove massive product development and growth for the technology industry.

Communication and processing technologies are nowadays an essential tool in almost every field of business. The Internet, with its interconnection of millions of computers, has evolved to potentially become one of the greatest resources available to businesses today. The World Wide Web (www) offers access to vast information resources and an immense number of sites on the Internet. Managers can access, store and move digital information (voice, sound, text and numbers). Private corporate intranets provide a universal interface for sharing company-wide information and work group level information. Employees can access information, collaborate, and distribute results anywhere, anytime.

The computer and telecommunications industries continue to converge and have resulted in advances in two-way pagers, digital cellular service, desktop video-conferencing, portable satellite phones, mini-dishes and high-speed Internet access. Business documents include graphics and text on computers around the world, sound, video and simultaneous voice communications. Thus, the Information Age implies a

time for a revolution in the information environment for business and management. The changes that are taking place may be more significant to management than the Industrial Revolution. [9]

6.2-Information Technologies

Some of tools named above are involved in the Information Technologies (IT). But to define IT, it can be said that it is a term that encompasses all forms of technology used to create, store, exchange, and use information in its various forms (business data, voice conversations, still images, motion pictures, multimedia presentations, and other forms, including those not yet conceived). It's a convenient term for including both telephony and computer technology in the same word. It is the technology that is driving what has often been called "the information revolution". [31]

Value chain and the real time economy It is widely acknowledged that in the era of theInternet, speed, agility and value creation are the most critical components of modern competitiveness. Indeed, it is the availability of planned information that distinguishes good competitors from the bad ones. This is because decisions are made quickly, inventories are no longer necessary and the customer is replenished on a regular, continuous and uninterrupted basis. In other words, information provides real time for communication and real time transactions thereby making the principle of developing relationships with the customers much easier than ever before.

The application of IT tends to reduce the coordination costs by reducing the costs of accumulating, storing, and communicating information. It is necessary, however, to mitigate transaction risk as well, e.g. through modularity and replicability of knowledge, open standards, intuitive user interfaces, and interconnection among networks. However, codified information is much easier to duplicate and transfer without any security measures.

IT-facilitated cooperation among enterprises generally takes one of the following forms:

Vertical quasi-integration: whereby existing relationships with customers and suppliers can become more tightly coupled.

Outsourcing: whereby activities previously performed within one enterprise due to high transaction risk may be shifted to third-party providers, in order to benefit from the higher production economics, such as scale and specialisation, of those providers.
Quasi-diversification: whereby enterprises cooperate across markets or across industries in order to leverage their key resources in new areas, exploiting increased economics of scale and scope in those resources. Relationships with other firms that were previously not possible due to high coordination costs or high transaction risk may become feasible.

So as has been shown one of the best utilities of the IT is the coordination and collaboration between firms. The scope for cooperation is determined by two factors: the degree of inter-relatedness between its production process and that of its suppliers and customers; and exploitability, by which is meant the extent to which the advantage is sustainable rather than contestable. Different industrial structures according are classified according to their inter-relatedness and exploitability

A more substantial degree of cooperation is possible. There are circumstances in which the whole of an industry may suspend competition in respect of some aspect of its operations, and pursue a joint strategy of collaboration. Typical examples are the adoption of standards (such as the dimensions and functional characteristics of interfaces between products, or common messaging systems) and of common infrastructure (such as transport containers and network services providers).

Collaboration may be in the interests of the customers, in that it may result in lower costs, higher quality or greater reliability; and of suppliers, in that it may lead to a reduction in the variability of their customers' demands. It can, of course, be detrimental to the interests of suppliers and/or customers, to the extent that it enables the set of enterprises to exercise market power, or to raise barriers to entry, thereby defend against the entrance of new competitors and hence to permit the emergence of a slothful oligopoly. This requires sufficiently different treatment, that it is deferred until a later section.

6.3-Information Systems

As have been said in the introduction, a Information System (IS) is a group of elements that interact to each other with the purpose of supporting the activities of a

company or business. Formed basically for a computer equipment (information system to operate) and a group of people who use the system. [26]

An IS do four basic activities: entrance, storage, processing and exit of information.

Entrance of Information: It is the process with which the Information system takes the data that it requires to process the information. The entrances can be manual or automatic. The manuals are those that are provided in direct form by the user, whereas the automatic ones are data or information that come or are taken from other systems or modules.

The typical units of entrance of data to the computers are the terminals, the magnetic tapes, the units of floppy disk, the bar codes, scanners, the sensible voice, tactile screens, the keyboard and mouse, among others.

Storage of information: The storage is one of the more important activities or capacities that it has a computer, since through this property the system can remember the information kept in the section or previous process. This information usually is stored in structures of information denominated archives. The typical unit of storage is the magnetic disks or hard disks, the floppy disks and the compact discs (CD-ROM).

Processing of Information: It is the capacity of the Information system to carry out calculations in accordance with a pre-established sequence of operations. These calculations can take place with data introduced recently in the system or with data that are stored. This characteristic of the systems allows to the transformation of source data in information that can be used for the decision making, which makes possible, among other things, that a taker of decisions generates a financial projection from the data that an earnings statement contains or a general balance sheet of a year bases.

Exit of Information: The exit is the capacity of an Information System to remove to the processed information or input datas to the outside. The typical units of exit are the printers, terminals, floppy disks, magnetic tapes, the voice and the plotters, among others. It is important to clarify that the exit of an IS can constitute the entrance to another IS or module. In this case, also an automatic interphase of exit exists. For example, the System of Control of Clients has an automatic interphase of exit with the System of Accounting, since it generates the policies countable of the procedural movements of the clients.

The Information systems have three basic objectives more important than other within the organizations: Automation of operative processes, to provide information that serves as support the process of taking of decisions and competitive advantages through its implantation and use.

The Information systems that obtain the automation of operative processes within an organisation are called Transaction Systems, because its fundamental function consists of processing transactions such as payments, collections, policies, entrances, exits, etc. On the other hand, the Information systems that support the process of decision making are the Systems of Support to Take Decisions. The third type of system, in agreement with its use or objective that does is the one of the Strategic Systems, which are developed in the organizations with the purpose of obtaining competitive advantages, through the use of the information technology.

Frequently the Transaction Systems are implanted in initial form and, later, the Systems of Support to the Decisions are introduced. Finally, the Strategic Systems are developed that they give form to the competitive structure of the company.

In the Seventies, Richard Nolan developed a theory.: According to him, the function of Computer science in the organizations evolves through certain stages of growth, which are explained below. [24]

Introduce the computing in the company. Nowadays this is not a problem because all of the firms work with computers; this step took place during the sixties. The problem was that the workers did not trust so much in it and at the same time they saw it as a too much complicate gadget just suitable for specialists.

Application an anarchic expansion. In this step the requests from the users are more complex, more related to the business function and with the improving of management process. The companies that are in this step have a correct management of data and only when the complexity improves, they start to have some problems for a coherent assignation of resources.

Coordination between the IS and the targets of the firm. In this level the computing inside the company is high and it takes importance three thing: control the costs in SI and TI, improve in the investments of the maintenance of the systems that exist and the developing of the new ones.

Independence between the strategies of the firm and IS/TI. In this case, the companies use this two gadgets like a strategic resource, they are in a high level of

IS/TI, in the efficient design of the organization and in the orientation of its business thanks to the IS and IT.

Another interesting thing of the IS in this thesis is to analyze which are the contributions of the IS in the links between the activities of the Value Chain that is understood as the mutual and at the same time indirect influence that exist between them.

An example could be the systematic recompilation and in real time of clients complaints (Client Service) that with the help of the IS can correct faster and make easier the quality control that (Control of Quality) do and that could be done during the production process (Operation area).

The use of the IS to improve the links between activities of the VC and the coordination that is established between them is so obvious nowadays. It is necessary to pay attention in the high potential that the IS have to arrive to change in some terms of the VC and find new orientations for the same business. In this case we can say that the IS participate actively in the design of the same organisation.

I separate in four different basic configurations of the IS related with the VC's activities.

In the first one all the activities (primary and support) need and generate information during its execution. The IS will collect the information generated for some activities that later will be used for other. This coordination can be between primary activities, for example to make possible that one order from a client arrive to production. Between primary and support activities, for example to see if the order from one supplier coincides with what the company ordered. Or just between support activities.

The second one is when there are subsystems of information (SSI) independent of the information that other activities use. One example of this case could be the computers that manage some machine in a workshop or when a manager of a firm use models that has been design for him self in excel or any date base.

The third case is when the SSI of the Value Chain overlaps and they finish coordinating itself. There is situations, in the organizations where there is a coordination between the SSI commented before. When this happens, the group of SSI could be consider part of the IS basic of the firm.

The last one is when the SSI coexist with the basic SI, in spite of this is related to the VC. Another possibility to organize the IS could be when the company has SSI relations with specific activities of the VC that coexist with the IS basic, although it

has a part related directly to the VC. An example could be when a financial company calculates the risk associated to a client and with this information could decide the convenience to concede or not some kind of preference interest.

Finally to finish this point comment that we can find that the evolution of the economy takes us to establish stronger relations with suppliers and buyers, as has been said before. The sub-contract of part of the production is more often so it is necessary to coordinate efficiently the firm's activities with those related with companies that have been subcontracted. They establish a net of companies where the relations between one and the other are stronger.

The IS, in an inter-organization level appear to give support to this kind of organizations. The VC o intern VC that exists inside the border of a business it extends adding the extern VC, or VC related to those businesses like suppliers or customers. This is what has been called Porter Value System.

6.4-Example of an Information Technology: The extranet

6.4.1-Explanation

To define extranet we can said that is the electronic computer to computer exchange of business information in a structured format that can occur between business trading partners and between various units within an organization. [17]

An extranet facilitates the exchange and processing of high volumes of business data from one computer to another and is used by companies to communicate with customers, suppliers, trading partners, and numerous other audiences who contribute to the operating efficiency or to the bottom line. So is a good gadget to have fast and better relations with the inside and outside activities of the value chain

The application of extranet involves the conversion of written documents into structured, machine-readable formats that facilitates the transfer of data by computer from one company to another. In essence, an extranet represents the bridge between the public Internet and the private corporate intranets, while the Internet belongs to everyone, intranets belong to individual organizations who build private, ideally secure networks using Internet protocols. Extranets are a slice of an intranet that provides a public window into company services or collected data. It can be an important part of the business strategy, product delivery system, and customer support apparatus. In essence, therefore, extranets can be considered to be a

distributed computer processing environment that links the business with its suppliers and customers. Conceptually, an extranet is a “tunnel” or a virtual network within the Internet which has sealed walls to prevent it being infiltrated.

The implementation of an extranet will and should have ramifications on how companies conduct their business and will drastically change the cost structure of the different activities in the value chain.

The implementation and the use of the extranet can have some benefits for a company, especially in three different areas: strategic, tactical, and operational, but of course these benefits will vary across different organizations because it depends of the sector and the magnitude of it.

The applications of extranet can improve corporate efficiency by improving data flow and error reduction. It can eliminate the need to re-enter data from paper documents and thus prevents clerical errors and it also can reduce the need for personnel involved in orders and accounts processing.

As a strategic benefits extranet was create to have a faster trading cycle, better ability to win new business or retain existing customers leading to improvements in business efficiency, better ability to respond to highly competitive new market entrants.

For its part, the operational benefits can include the reduction of costs in paper and postage bills cut, reduction in money tied up in stock, manual processing costs (e.g. associated with verification, keying and re-keying of documents and the cost of manual filing systems);

Finally, the marketing benefits can include: enhanced image, competitive edge and improved corporate trading relationships.

6.4.2-Impact in the activities

The relation between the value chain and the extranet can be analysed with the impact that the second one give to the value chain

This impact can be examined better if it is separate in two categories: the activities relating to purchasing and the activities relating to coordination.

6.4.2.1-Activities relating to purchasing

Inbound logistics: The extranet resulted in electronic data integration and establish intimate linkages between the company, its suppliers and its wholesale buyers. Such data integration produced inventory and coordination savings for the company

especially when it purchases in bulk. Cost savings arose because electronic integration results in more consolidation and the use of a smaller number of suppliers. This implied less time and paper work associate with coordinating and dealing with suppliers.

In addition the adoption of the extranet can significantly impact the order cycle time between the company and its customers. A reduction in purchasing lead times allow for smaller orders to be place more often resulting in lower inventory holding costs.

Outbound logistics: In the case of producers of "intangible" output such as information the output can be maintained in digital form and transmitted over the Internet on demand with little or no physical inventory movement.

The extranet can simplify some middle work moving the product from the supplier to the company directly eliminating some of the "middle parties". Significant cost savings can be generated for them due to the elimination of many middle parties that they no longer had to deal with.

Another change that can achieve is that the electronic processing of transactions eliminates paperwork as typical paper transactions can become electronic documents with electronically stored signatures. Decrease costs directly attributed to elimination (reduction) of activities related to manual sorting, matching, filing and reconciliation of mailed documents.

Marketing and sales: The use of the extranet can help for example in two ways.

First, sharing databases between companies who can use it for tracking customers or between other retail stores (whom they refer to as partners) reducing relevant costs of market research and even, to a certain extent, advertising expenditures.

Second, the use of the extranet can significantly reduce publication costs such as those incurred by catalogues.

Under the extranet, the main suppliers and buyers of the company can access and contact each other directly. This eliminates some of the marketing cost and other related costs necessitated earlier by such transactions.

Service: Customer service can improve through improving access to information and decreasing lead times. Through the extranet, orders can be processed quickly and shipments scheduled accurately. The extranet allows for the incorporation of more timely and accurate data into the company's planning and control system.

These workstations are used to provide information on promotional campaigns and other pertinent customer oriented matters. This information can be distributed

electronically to a broad customer base (including individual shoppers as well as wholesale buyers these functions may not be required.

6.4.2.2-Activities relating to coordination costs

Procurement. Extranets allow for the effective management of multiple vendors, contractors and other contributors to the production process. The main advantage of the extranet in the case can be that it facilitates the reduction of suppliers. This can generate cost savings arising from less time on making queries and soliciting bids. In addition to reducing the number of suppliers, the extranet reduce the costs of coordinating with suppliers. For example the company's extranet system connects their point of sale terminals to the main supplier's delivery system thus decreasing the likelihood of them going out of stock on popular goods.

Selling: The adoption of the extranet allows a faster preparation and transfer of invoices, and also can facilitate faster processing of invoices and payment. The company can generate further benefits in terms of savings due to the reduction in average time for payment

Technology development: One of the advantages in this area is by eliminating the use of regular mail and by decreasing the time needed to process an order transactions, the products can be shipped to wholesale buyers sooner. Delays in shipment can be minimized thus ensuring a higher probability of meeting promised due dates

Human resource management: Under the extranet, a distributed team-based approach is gaining favour by the company as the preferred method of doing business in the future. It is envisaged that "pet" projects of the management (for example, a project examining the impact of expansion of the retail business into other countries) can be staffed with "virtual teams" of managers, consultants and administrative assistants. (These teams can come together for an assignment based on their expertise and may never work together again. So the key is the ability to get up to speed quickly on each other's specific areas of expertise.)

6.4.3-Costs

After analyse the impact on the different activities it could be good to know the costs and how much investment is required for it implementation.

The costs on investment associated with building, launching, and maintaining than extranet presence are remarkably low and can be easily justified with immediate

efficiencies and cost savings for the organization. There are main and remarkable costs as:

Hardware costs: This comprises the costs of the microcomputer, minicomputer, or mainframe.

Software costs: This comprises the extranet software and any other application development required to integrate extranet with other applications such as order processing or invoicing.

Telecommunication costs: The costs of accessing and using a value-added network.

Training costs: The costs related to training employees to change their existing work practices.

Maintenance costs: The costs relating to salaries of appropriately skilled technology people to maintain the network on a regular basis. [5]

6.4.4-Problems

There are two possible problems of the implementation of the extranet. The first one is that any improvement in profit cannot be directly attributed to the implementation of the extranet technology because it could be attributed to a wide variety of market factors.

To know which have been the benefits, the best way could be to estimate separately and take a decision of how to do it with the management accountant.

The second one is that some small-medium companies without a lot of capital are not able to change and to invest in the extranet because of the money that is needed. At the same time them suppliers and customers require them to have it so the position is quite difficult for this kind of small-medium business that can not adapt easily to this new system and can arrive to disappear.

7. INVESTIGATION

7.1-Example of the implementation of a supply chain in a Spanish company

7.1.1-Introduction of the company

First of all before talk about what kind of relation exist and how the company works with its suppliers it is necessary to make a description of the firm.

Ramón Par S.A. is a company, founded in Barcelona (Spain), on January 12, in 1912. They manufacture narrow and wide abrasive belts, discs, sheets, in any dimension, abrasive wheels and rolls, for sanding works on all materials and surfaces. At the same time they also offer complementary products to help them customers to achieve a better performance in this type of works.

The origin of the company was the manufacture of transmission leather belts and accessories for textile industry. A big change for the company was in 1928 when it became a shareholder company, extending then this activity to other industrial products, with a coated abrasive specialisation.

By the 40's Ramón Par S.A was the exclusive representation of DUREX Corporation, the union of the three main coated abrasive companies in America. Nowadays they own a full conversion plant for all kind of coated abrasives, they import in exclusive leader trade works for Spain, Portugal and south of France, exporting to other countries as well.

The company is located in an Industrial Area called La Clota, in Cerdanyola del Vallés, (Barcelona). The location is so good because it is so near from Barcelona and at the same time so close to the main highways of Catalonia. The majority of the clients of Ramon Par S.A are inside or near Spain so the trucks are the most common vehicle for distribution, especially in the Iberian Peninsula. But for the other hand there are lots of different suppliers from different parts of the world so the arrival of the row materials is by plane or boat. Cerdanyola del Valles is at twenty minutes from the port of Barcelona that permits a quick and easier service.

The group of people that formed the group is about thirty, ten of them in the offices and the others in the factory, manufacturing.

The main purpose of the company from the beginning of it foundation till now have been so clear. Customer satisfaction, security and quality products.

To achieve this purpose the company makes some actions like create reliable quality, so more customers can be benefits from its high-quality products, pursue and provide polishing technology to cope with the needs of the new age, contribute to a beautiful environment and waste reduction through untiring research efforts for every possible maintenance technology and have a personal and specialized treatment with each client.

This personal relation is done having a frequently contact and giving them a free consultancy for every different product. The quick service and application experience coming from so many years in that market permit them to select the best products in price quality for any application of each of its customers. [42]

7.1.2-Products

To know better which products we can find and how are them I will just describe some of them, not all because of its quantity, to understand better what kind of materials they use and which is it purpose.

The firm has divided its products in three big groups, abrasives, products for finishing and complements.

For the products for finishing they separate in two groups: Tex Par line and Mittel Line.

Tex Par line: TEX-PAR®, is a tridimensional abrasive made of non woven synthetic fibres soaked in resin and abrasive of aluminum oxide or silicium carbide in several presentations and dimensions according to application that we can find in different forms: in rolls and wheels, flap wheel form,..

Mittel Line: They are similar products to compact abrasive wheels, having a poliurethanic backing instead of a non woven fibre This product is elastic, very hard and easy profilable.

For complements the company have a lot of different products but with two will be enough to understand them

Graphite coated canvas: Graphite coated cloth to recover steady parts of the machine where a friction is produced. It is used to reduce heat and friction improving belt performance

Filter: Wool product made of pressed fibres. Application here is backing graphite coated canvas, drums cover, to polish, filtering cleaning, as a contact wheel, etc... Due to its universal properties, it depens on each case. [45]

7.1.3-Suppliers and warehouse.

To understand better how works the supply chain in this company, the best way could be dividing in two parts, how they run the warehouse and how is the relation with the suppliers.

7.1.3.1-Warehouse.

Ramon Par S.A as the majority of the companies nowadays has reduced a lot the size of the warehouse to reduce the costs that are related to them. To achieve this, the company has made some changes in the last fifteen years.

In this last fifteen years the firm has been implementing two new programs to run the warehouse. These programs, at the begging, were not easy to implement because of the big change that implicated to this department and to all the company in general.

These programs are specifically to manage all the orders that are done and the periodicity that has to be done. At the same time they manage the entire warehouse and make easy the calculus for the interchange.

These two basics programs are:

The first one is a PACK called Facturaplus/Contaplus from Sage Group that is the responsible to carry out the accounting and the administrative department.

Contaplus is one of the most sold computer program for the medium and small companies that want to carry out the accounting in an easy, tidy and effective way. At the same time is a very useful gadget to send documents by internet using the fast, comfortable and washable way as it is.

FacturaPlus, like Contaplus has become in one of the most used programs of turnover for medium and small companies in Spain because of its facility to use, the easy way to adapt in any business and its compatibility with all the programs SP. It includes a big variety of computing administrative management applications, from management turnover to the warehouse management or to stocks control. [38]

These two programs are not directly related to the warehouse but they help the firm to control all the money that is spending because of the raw materials. With them, the managers can see if the firm can save more money in the warehouse, with the raw materials or with the suppliers. [41]

The second program is the responsible to manage the production and the warehouse and was design for a computer expert especially for the company, so none else use it. This program establish the number of the products that has to be done and at the same time makes all the calculus to know the number of row materials that have to be used for each product (could be weekly, monthly or three monthly).

The major advance with this program is that with the information of the level of stocks that is still in the warehouse and the time that the suppliers take from when they receive the order till the company receives the materials it is allowed to manage the entrances and exits of the row materials that have to be in the warehouse.

But, because of all the years that the company is in this market and the fidelity relation that have with the majority of their suppliers the relation is much easier and the most of them know how many and which quantity has to send to the company during the year.

The program helps the company in the moments that there are some changes in the production because there are more or less orders than normally. With it, they can inform the suppliers with the enough time to change the orders or the size of them and do not stop the production. This help to save lot of money or reduce costs related to the extra stock that could appear.

So, could be said that the most of the suppliers make periodic supply to RAMON PAR S.A., they send the raw materials independently of the level of stocks. They just change this way when there is a change in the level of the production

7.1.3.2-Suppliers

The company has a lot of different suppliers from all around the world, as has been said before. This has been caused because in the last years, in this sector, a lot of different small companies that supply the different row materials have disappeared and just some from different countries are still alive. Before this change, the company had a lot of small suppliers from Spain and the work was easier, nowadays with the globalization of lots of companies, Ramón Par S.A has had to change some strategies of its supply chain.

The most important suppliers for the company are from Spain, Italy, Sweden (NaxoFlex), England, China, South Korea (Korea Abrasive Ind. Co), Germany (Awuko), Greece, Turkey (Interflex with the headquarters in Izmir) and Portugal. At the same time they are talking with some future suppliers from India and China (Shanghai Yuli Abrasive Belts), because of its economy improvement in the last ten years and because in the future will be an important market to export the different products. As a lot of people say, this two countries will be the new heart of the economy from all Asia.

The relation with the suppliers is so personnel and there is one person responsible of this department. The 95% of the deals that are done between the supplier and the firm is by internet or fax and some times by messenger. These deals include the orders, the demand of samples and all the complaints that could appear.

The relations with every firm is different to each one depending of different factors like the turnovers, the years of contact, etc. But normally, the responsible of the firm meet with the suppliers once or twice a year in a sector fair. In this sector normally there are two big fairs, one in Europe and one in Asia. They use these events to talk and meet the different suppliers from all over the world to talk, face to face, about the changes that are developing and the new alliances and deals that could be in the future. The last fair was in February in Germany and the company was talking with possible new suppliers from China and India. [51]

7.2-Example of the implementation of an IT in a Spanish company

7.2.1-Definition and applications of SAP

SAP is a software solution that allows the integration of all the flow of information to all the levels of the company, and simultaneously, allow to obtain a considerable reduction of costs, one better administration of the relation with the clients, to plan and to optimize the chain of provision with the suppliers and the clients, and finally, to remove the maximum economic yield to the opportunities from the businesses. By these reasons has become the company leader in software and services that they qualify to the companies to make businesses via Internet. Concretely, the number of licenses of SAP installed in the last three years has increased remarkably and this has allowed the companies to find new ways towards other markets.

Some of the applications of SAP that can be carried out are, for example, to integrate the operations related to finances and accounting, to administer Human Resources and to plan the logistic chain of provision or logistics.

To make it more clearly, I put a series of the most interesting examples of SAP applications in some different areas.

The application of SAP Accounting and Finances increases to the transparency and the economic and countable control inside the company, and simultaneously it can consolidate different types of accounting, which means that is compatible with the different methods from accounting that can use other companies.

The SAP transaction Human Resources is an innovating solution that cover the functions with selection and recruitment of personnel, administration of personnel, administration of benefits and incentives by these, management of the compensations

and lists... among other tasks that by means of software can be made of easy and simple way.

Logistic application of SAP consists of the purchase from Internet of the product, control of inventories, management of merchandise, supplying and distribution, and finally, the sale of the merchandise. It is logical to think, that if each part works correctly, the application of the SAP gives value to the provision chain and diminishes the costs of transport and inventory.

Finally, the transaction of SAP related to the deal with the client, allows to administer and to control of more effective way the services to the client and other companies, anticipating the external cover and commits to such. [32]

7.2.2-Introduction of the company: LEVENTON, S.A.

To know better what kind of company I am going to write and which sector is in I think that a short description of the history of the business, which products have been produced or which are the first costumers could be interesting and more clarify.

The history of the company begins the 1979, when Rubiralta's brothers found the company Instituto de Bioquimica Aplicada (IBA) for the manufacture of surgical dressing gowns. This company was created within the Group CH-Werfen, group of companies related to the sanitary sector within the Rubiralta Group. Two years later, it changes of name by commercial reasons and facility of pronunciation in all the languages becoming present LEVENTON S.A..

Passed two years, in 1981, the company already made electrodes, it packaged and it sterilized some containers for blood and it also packaged reactive "in vitro". Then there is an order to LEVENTON to design and make a volume regulator. So the Dosiflow 1 is born in 1982 that along with Dosiflow 10 (1987) will become products stars of the company. Later the fan will be extended with the Tubes of Arterial Pressure, the Respiratory one, the bandages or the Respiratory Incentive, among others.

All these products are used to make different medical tests like for example: blood analysis, to facilitate the system drop to drop or like protection of hurt.

Their expansion in the international market begins in 1986 with the entrance of Spain in the European Community getting at the beginnings of the 90 to represent half of the invoicing of the company. In 1993 a contract is signed to make regulators of volume (Dosiflow) for the American market. This fact makes increase until a 75%

the percentage of the invoicing due to the exports. This international expansion has been consolidated since then, becoming at the moment an 85% of the invoicing, invoicing of which a 20% correspond to the USA.

So, at the moment, LEVENTON S.A. is a manufacturing Spanish company of no reuse devices medical, as much sterile as no sterile that has offices and of centres of production in Sant Andreu de la Barca, Sant Esteve de Sesrovires and Mataró, industrial localities located about 25 km of Barcelona and the group it is formed by a human equipment superior to 100 people.

As all the firms it is so important for a business to know, first of all, which are the most important objectives. If a company knows which are its goals to achieve inside the company it is easier to know the way to arrive to them. [35]

LEVENTON it focuses his attention on 3 objectives: innovation, quality and services. The constant attention in these areas has allowed the firm to expand internationally, controlling and following close by the demands of the market. For that reason is why LEVENTON holds a position of leadership at world-wide level within the product market of intravenous therapy.

The quality is in considered in LEVENTON as a global concept of company, like to the rest of companies of the Werfen group. From its beginnings, LEVENTON always has been a company it jeopardize with the quality, due to the type of products that makes.

It is authorized like manufacturer of Sanitary Products by (DGFPS) the Main directorate of Pharmacy and Sanitary Products from 1984. It was one of the first Spanish companies of the sector to pass audit of Federal Drug Administration (FDA) and to obtain the necessary Registry for the Sanitary Product sale. At the moment, all the products that make have Brand EC relative to sanitary products, and the company is registered according to norms ISO 9001:1994 and IN 46001: 1996. As all the processes of manufacture are automated completely, implanting always those technologies agreement with the state-of-the-art of medical devices and with the good practices of manufacture established in the GMP. All this has been done to design, to make and to control products with the maximum rigor, because they are destined to improve the quality of life of the population.

Simultaneously, the company has put special attention in the extension and expansion of its nucleus of business developing a continuous program of I+D projects, generating new and innovating products.

All these ingredients have allowed LEVENTON to offer to the medical market an ample and complete rank of solutions that go from the initial and conceptual design to sterilization and control of the end item, passing through the development and industrialization of the product.

7.2.3-The application of SAP in LEVENTON

-Why the introduction of the SAP?

In the year 2000, LEVENTON considered that it was important to implement a software that allowed to quantify and to follow the strategy marked, making possible detailed the analysis of the results for the correct decision making. Challenge was by department of IT, because they had to find a software that was adapted to the map of applications of LEVENTON, being coherent with the corporative strategy of the company.

What was clear for them was that software had to be a leader in this field, able to guarantee the future technological evolution as much as functional and to be supported by the solution of a great company. Other factors that were due to consider were the costs, the terms of implementation and maintenance.

The more excellent factors that brought to the election of SAP were:

-The great number of professionals with knowledge in the SAP solutions considered, since previously already they had worked.

-During the selection process, different existing solutions in the market were evaluated (Jd Edwards, Baan, Oracle, QAD, PeopleSoft, SSA, IBM), but SAP solution offered better costs than its competitors, mainly in the maintenance of the licenses.

-The company trusted in the solution, evolution and leadership of company SAP AG

- Also were valued that the implementation of the SAP could be progressive in functionality and top-down throughout the company.

But finally there were two key factors that took a very important weight to decide for SAP. First one was that SAP allowed consolidating different types from accounting. This was a great advantage by LEVENTON since it works with companies located to

different countries, where each one has a system to enter the economic entrances and different exits.

The second decisive characteristic for the election was that this software allowed to making currency exchanges instantaneous, very useful since the different companies from the group that comprises LEVENTON work with different currency. [50]

7.2.4-The more used transactions in the company

Software SAP allows making several transactions related to all the departments, levels or areas of the company. Like most of companies related to the world of the production, LEVENTON, put into operation the transactions that considered more equipment by their type of organization. The transactions can be grouped in the six following areas: Warehouse, Sells, Accounting, Production, Human Resources and Control of quality.

These six areas totally is related in the program, like for example, when the production of the following month is being planned, directly enters the number of required people, the number of necessary turns, and quickly the department of human resources already can manage the personnel adapted by the factory.

7.2.5-Benefits of the introduction of SAP

SAP is the system leader in technology ERP (Enterprise Resource Planning), it is planning systems of resources that already are in their third stage, their later stages are MRP (Manufacturing Resource Planning) I and II, the fundamental objective of which is to improve the information and the planning of the productive process. The main characteristic is that all the applications are integrated, which bucket that shares a same data set that is stored in a common data base. The companies benefit from this information because system ERP relates the business processes and it handles them as a whole of integrated form.

All the set of benefits that contributes the introduction of the SAP can summarize in three ideas: First, the possibility that offers to the company to grow, that means, to increase the number of orders, to acquire new suppliers...Second, the possibility to obtain data updated on real time and third, the capacity to be a competitive company respect the other companies of the same sector.

But it is not just these three things that have improved the benefits of the firm. There are more that are shown with more detail below.

1. To reduce the time of reaction
2. To reduce the costs of operation and risks
    -Automation of the inventory
    -Control Better pursuit of the orders
    -Best logistic control
3. To administer and to control better projects
4. To be able to carry out decisions of management based in real and updated facts.
5. The beginning investment is not superior to other options
6. To use the most advanced technology
    -Integration of suppliers and clients
    -Data warehousing
7. To improve the quality of services
8. To reduce the time of delivery of orders to half
9. To qualify to react in sudden changes of the demand.
10. Reduction of the level of inventories to two thirds
11. To control the material in the processes of production
12. To tie stocks with real necessities
13. To control the cost of each element
14. To tie soundings with Order of Manufacture
15. To have BOM (Bill of Material) updated
16. To control sales
17. Detailed analysis of productions and sales by products and clients
18. Analysis of costs by product and Order of Manufacture
19. Made possible to apply real costs by sections
20. Control of external works
21. Control of labour days
22. Accounting on real time, with different currencies and changes
23. To consolidate accounting by plants, companies or countries
24. To plan productions [50] [35]

7.2.6-Disadvantages of SAP

LEVENTON indicates that one of the main problems of the implementation of SAP has been the resistance to the change for all the workers at different levels. In

addition, the use of this technology implicates an economic investment as of time and effort very elevated, therefore, is had to try to inform the future users of the change and the benefits that will contribute.

Another very important disadvantage is the great dependency that is believed in the users of the program. The daily actions of the users are gotten to mechanize of such way, that the reasoning capacity diminishes. When the system is not adapted completely to the necessities of the company or it is not fed with the suitable information, it can provide erroneous results that bring to make mistaken decisions.

The firm commented that at the beginning of the software's implementation, it is usual that the users have the sensation to loose the time and this caused many doubts in the workers of the effectiveness of the program.

8. CONCLUSIONS

This report has looked at some aspects of the value management concept. First of all the intention has been to clarify and resume some of the different parts of the Value Chain management, starting for itself and continuing with the three considered more important aspects inside the value Chain as they are the Supply Chain, the Customer Relation and the Information Technologies.

In the part of the value chain, after a definition and a differentiation between costs and value that lots of times has been mixed, the report proposes a road map that the companies have to do or have to achieve and can help to the companies to introduce VCM if they wish to optimise their performance and remain competitive, in a real time economy and digital age.

After there is an explanation of the five competitive forces of Porter to understand better how Porter arrived to the idea of the Value Chain and then we come to the explanation of different elements inside it like the activities, the costs, the linkages, the differentiation, uniqueness, strategic position, substitution, benefits of the Value Chain and the critical success factors.

First of all, it can be said that the report tries to show that the three main keys of the Value Chain are: The importance of focusing on processes and identifying core critical activities within organisations that have high leverage abilities, which can enable organisations to define their value propositions, find the main costs and reduce them as much as possible and, of course, the linkages between them because as is exposed, all the framework of the value chain could not be possible without the idea of the linkages between one activity to the other and one cost to the other

But fundamentally, we can extract from this part of the report that at the heart of value chain management, are the needs of customers, the importance of delivering value on a consistent basis to customer and the importance of developing relationships through continuous information flow, continuous focus and the ability

and agility of organisations to continuously replenish those wants and needs in a timely, quality, cost effectiveness, differentiation and innovative and uniqueness way. It can be established, too, that there are two aspects that need to be taken into account. One of them is the importance of having a clearly defined value chain strategy, that is deployable and that can be monitored on a regular basis and that can deliver the wishes and levels of ambitions of any organisation concerned.

The other aspect that can be highlighted, at that has been said lots of times, is the importance of focusing on partnerships. Indeed, one of the conditions for the effective application of Value Chain Management is a clear emphasis on co-operation and collaborations. This therefore requires a new organisational mindset and a new way of behaving when it comes to sharing information. This is particularly the case when it comes to aspects on future strategic planning, business growth and development plans, investment inventions and the direction that the business is planning to take in the future.

Aspects such as these are so critical for partners as they affect their ability to plan, to commit resources and to gauge their own strategies so that mutual leveraging takes place and value added is rendered at an optimum level from all sides concerned.

In the second main point, the Supply Chain Management, the main purpose of the report is the same as the Value Chain: to define clearly what is it and put the main points to identify them. At the same time includes the research that has been till the moment and the future research that can help the reader to identify the future way of the Supply Chain.

This part of the report try to identify the different elements that are involve in the supply Chain and put it in the correct order to try that any person inside the company could understand how is it going and see how he can help to improve it because, as has been said, the supply chain just do not involve the suppliers; involve all the chain of production and other parts of the firm. At the same time the thesis shows the most important benefits and the four characteristic dimensions of a SCM strategy

SCM, nowadays, is one of the most important preoccupations that a firm can have, the world of business is changing fast and lots of companies disappear or are absorbed for others. Years before the companies had lots of different suppliers but now the things have change and the most important thing is to have the necessary suppliers with a lot of relation because without it, without have a continuous contact with them and with a mutual help, the companies will have lots of problems to go on

in this global business. For this reason I include which has been the last research in this area and which will be the future research because, for sure, that the business will change and companies will have to be ready to adapt to this changes. Nowadays the most preoccupation for the European, Japanese and American companies is the fast developing of countries like India and China that are creating so much changes in the global economy and putting in risk a lot of companies and jobs from them countries.

In relation to the Customer Relation Management, in the present time, and after the interpretation of the concepts that surround to the CRM, nobody still doubts the necessity to implement this technological and management tool that according to many experts is one of the forces fundamental to control within the competitive strategy.

This part of the report treats to insist on that the CRM has to become, with the time, in part of the "Culture" of the company, as it does habitually with tools like Norms ISO, so the interaction with a client become an opportunity but to offer him to an improved service, that can surpass their expectations, obtaining therefore an authentic relation but with the client. Because, as the statistics show, that approximately 65% of the clients, who move away, do it due to a deficient received service. [29]

Speaking in economically terms, is it known that the costs involve in the CRM are so varied, depending on the equipment that already exist, the size of the company and the size of the project that the company wants to implement. But it is necessary to clarify, that the cost of opportunity of not implementing it will be greater than the cost associated to the implementation. For that reason, although at the beginning it can seem that the costs will be greater than the benefits; at the end, this gadget is basic to take ahead the company and without it, it will be hardly possible to be competitive nowadays with the other companies that have it.

Considering, for example, the facilities with which the company has to put in practice this tool from the technological point of view, is the same one that will have its client to cancel the relation, with a simple mail, without presenting the opportunity to the firm to know which has been their real reasons to break relations.

Also, I think it is very important to begin to see the form in which it is changing the way to make businesses, because we are entering an era, in where the competition will not be between companies, but between the chains of value or ecosystems

integrated by the different companies in its rolls from suppliers and clients, where exactly the entailment with clients through CRM, will mark the future to follow in the race or not.

About the new technologies the conclusion is so clear, is the most essential future gadget that will be used in any business and with out it will be impossible to run a business. Nowadays is more or less indispensable and this change is producing lots of problems in some companies, the majority small or medium societies that have to invest lot of money.

But, for a conclusion of this part I think it will be better to talk about a specific IT like extranet because conclusions of it implementation will be more clarify than a general IT

Extranet have been defined as “one of the hottest technologies” in the last ten years. With this definition some one can understand the importance of this gadget. . [17]

Starting for the costs it can be said that cost reductions can be anticipated due to streamlining and automation of functions. However, it is note that extranets require coordination and commitment. Managing a system across multiple organizations is a complex endeavour and should not be understated or overlooked. Management must commit to and adopt standards, methodologies, and practices throughout their organization to support the utilization of the extranet environment.

Extranet has some limitations or problems in its implementation that could be interesting to consider in this part of the thesis, more than the profits that has been explained before.

The first thing is that the view of extranet has changed a lot from the early adopters to the present users. The first adopters of extranets viewed implementation as a method to gain competitive advantage over other firms. However, as more competitors adopt extranets, and as this company now finds, the system has now become less effective as a strategic tool and more a “way of doing business” to remain competitive. Unfortunately, an extranet can be complicated by differing work methodologies, company priorities, and individual agendas. However these complications can be mitigated by eliciting the support of senior officers on a company wide basis.

The second remarkable thing it is to ensure that all the different business entities are involved in the project right from the outset to help establish a sense of commitment.

Establishing channels of communication and incorporating committees for group decision making can go a long way in alleviating potential complications.

Another problem that has to be considered is the tangible and intangible costs relating to training of existing personnel. Training people for proficiency in an extranet usually comprises a dual challenge. The first challenge arises from training people to use a different system and coping with the "resistance" that is generally applicable to such situations. The first of these two challenges is easy to address. Context sensitive online help and online user support mechanisms make it easy for users to find the answers they need quickly and effectively. The second challenge is more daunting because it involves forcing many companies to "share" a common database.

Finally, the conversion to extranet may cause disruption to the business. With the cost-per-day of senior management, consultants or a large staff, even a week of downtime could send a ripple effect that could impact the bottom line of multiple organizations.

However, the resultant benefits in my view far exceed the costs.

The example of the Supply Chain that is in the report is to clarify how a Spanish company is working in this case, how are they changing the relations with suppliers and the new technologies that they use to run the warehouse to adapt to the future. In this case the company is a medium company that from years, like a lot of Spanish companies is trying to continue in its business, and for the moment with some success.

The conclusions that can be taken from the supply chain of RAMON PAR S.A is that every firm is different than the others and that the most of them have its personal computing program to run the warehouse. So it is so difficult to implement one company supply chain to another one because of the differences that will exist between them, and more if it is not from the same sector.

Nowadays companies are trying to convert the warehouse as much smaller as they can because the extra stock is every time being a bigger cost for the companies. So as better the firms can manage the warehouse, having the enough row materials for the production but without the possibility to remain without it, more benefits will have the company. To achieve this, first of all they have to have very good and confidential relation with the suppliers and then, a good manage of the in and out raw materials of the warehouse.

Just to finish this part say three things: The first one is that another time we can see that the new technologies are so present in this kind of business and without them could be so difficult to maintain in the business.

The second one is that a permanent and continuing contact with the suppliers, by internet but better face to face, is necessary to evolve. Because with this contact both know which are the ways that have to follow and which can be the improvement for the company.

The third one is like the director of purchase in RAMON PAR S.A says: in the business you have to stay alert of every simple movement of the competence and the different alliances that could be and at the same time try to establish stronger relations with suppliers and customer firms. [51]

The conclusions that I can take from the Spanish company that has implemented a IT is that LEVENTON is a big company with different resources for the integration of technology and systems of the information to be possible that the company grows more and be stronger within its sector. The reality of many Spanish medium companies, is harder, because they have the obligation to implant SAP or any other present IT to his company, because otherwise in a short term, they can be excluded from the sector because of not be enough agile, efficient and competitive.

Although SAP is offering more accessible packages to the Small and Medium Societies and (SMS) is delivering a great attack to arrive to this market, I think that without some type of financial adjustment from the government, there will be few companies that can be implemented the SAP to be able to be more competitive to the markets.

It can be, that some medium companies that at the moment count with some type of software that very is not updated already have obtained real benefits with this, and then they can see the option to change the software and settle the SAP, but by the rest of (SMS) the first serious step to implant some type of software that covers only some areas with the company and very accessible cost. It is essential that many companies mainly update their technology in the field of integral technology that allows them to be more competitive and to integrate itself to the great companies like LEVENTON.

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Interviews

[50] Interview with the main director of the company LEVENTON S.A

[51] Interview with the director of purchase from RAMON PAR S.A

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